ATTACHMENT 8

Contract

F40600-03-C-0001

6 January 2003

(Conformed Thru S/A P00080)

PERFORMANCE WORK STATEMENT (PWS)

OPERATION, MAINTENANCE, INFORMATION MANAGEMENT, AND SUPPORT OF AEDC

ARNOLD ENGINEERING DEVELOPMENT CENTER
ARNOLD AIR FORCE BASE, TENNESSEE

FY 04 -15

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1.1 TEST PRODUCTS

1.1:1 SCOPE: System development and capability knowledge is the ultimate product to an AEDC customer. A customer engages AEDC with the intent to generate data, information, and knowledge to aid them in the development, characterization, performance enhancement, or qualification of a system or to identify completion of development milestones. Test is about decision support - infusing the customer's decision process with information from the test. This PWS element contains the management and technical support of AEDC's test workload. AEDC resources include the main site in Tullahoma, TN, including the Advanced Missile Signature Center (AMSC) (Appendix 1.1-1), as well as the AEDC Hypervelocity Wind Tunnel at White Oak MD (Appendix 1.1-2), and the National Full-Scale Aerodynamics Complex (NFAC) located at Ames Research Center in California. It includes all work necessary to plan, provision, execute, analyze, and report on test and evaluation (T&E) and missile signature projects. Actual workload can vary significantly from test asset to test asset. Test projects range widely in type, size, and complexity. A description of the test assets used in connection with this PWS element is provided in Appendix 3.1-1. A description of the plant equipment used in connection with this PWS element is provided in Appendix 3.1-2. A description of the instrumentation and controls used in the test and plant facilities is provided in Appendix 3.1-3.

1.1:2 REQUIREMENTS: The contractor shall provide all project management and technical support necessary to accomplish effective test and evaluation and missile signature efforts in support of the AEDC mission. The contractor shall also provide analysis, evaluation, and reporting of foreign scientific and technical information including technical findings, trends, capabilities, and limitations.

Contractor and government program managers will work closely during planning and execution of any project. The government program manager will be the primary customer interface on all programmatic issues (schedule commitments, financial planning and commitment, status reporting, etc.) and will be kept fully informed on project and customer issues of any nature. Extensive direct communication between the contractor and the user will occur on technical issues.

On occasion, Arnold Engineering Development Center (AEDC) will provide test products to foreign entities. Such exchanges require contractor compliance with International Traffic in Arms Regulations (see PWS 6.1:2.1.4), AEDC Foreign Disclosure Office requirements, and AEDC Scientific and Technical Information (STINFO) policies.

The Contractor shall:

1.1:2.1 Assist Government counterparts in developing workload projections that cover the period of the Future Years Defense Program. Detailed planning is required for the execution year.

1.1:2.2 Determine feasibility, identify requirements, document deficiencies, and recommend a course of action to achieve customer objectives.

- Correlate customer requirements with facility capabilities, test methods, and evaluation tools.
- Determine facility instrumentation and control requirements.
- Assess data acquisition/processing methods, data quality requirements, and test data analysis needs.
- Develop Rough Order of Magnitude (ROM) cost estimates. (OT-2003-30001)
- Develop a Statement of Capability (SOC) describing the details of each T&E project and submit to the Government for approval. (OT-2003-30008)

1.1:2.3 Plan T&E and missile signature projects.

- Coordinate all requirements with the Government project manager, customer(s), test article manufacturers' representatives, and support organizations, as appropriate.

- Develop detailed cost estimates, and activity schedules. (OT-2003-30002) (OT-2003-30003)
  – Detailed cost estimates should be prepared using task-level cost estimating tools.
- Define requirements for test article buildup, installation, modification, and removal.
- Employ modeling techniques, when necessary, to prepare pre-test predictions on the test article(s) and test article(s)-to-test facility interactions.
- Determine the most effective and efficient approach to executing the test matrix and make recommendations to user/customer.
- Effectively support and properly document all pretest, test, and post-test meetings and maintain accurate and timely records.

1.1:2.4 Conduct and manage projects in accordance with the approved SOC and the AEDC Consolidated Scheduling Process.

- Support the receipt of customer test articles and support equipment.
  – Inspect customer furnished test articles and support equipment for damage.
  – Perform test article stress analysis as required.
  – In conjunction with PWS 3.1 and 5.1.1, implement test-specific engineering changes to data acquisition/reduction software to meet test objectives.
- In concert with the customer and the appropriate Government representative, develop, measure, track, document, and report on agreed to performance metrics.
- Conduct the test.
- Monitor test systems for anomalous facility and/or test article behavior.
- Track, manage, and control project cost, schedule, and technical performance during project execution. (OT-2003-30004) (OT-2003-30006) (OT-2003-30007)
  – Apply Earned Value Management (EVM) to specific test projects as directed by the Government.
  – Notify the appropriate Government representative as soon as practicable of any potential or actual deviations; identify cause(s), cost, schedule, and/or technical impact, and recommended recovery options.
- Upon project completion, close out all applicable charge numbers and notify the appropriate Government representative.

1.1:2.5 Provide analytical support as required.

- Check and validate all data including measurement and data uncertainties.
- Perform data analyses in accordance with customer requirements.
  – Apply Integrated T&E solutions as appropriate.
  – Summarize results and provide recommendations.
- Complete and distribute preliminary and/or final test data packages, reports, and/or scientific and technical information consistent with customer, STINFO, and Defense Technical Information Center (DTIC) requirements. (OT-2003-30005) (OT-2003-30011)
- Archive test records for historical reference as directed by the Government.
- Assist the Government in the release of project documentation.
- Assist the Government in the assessment of all Air Force Component Improvement Program uninstalled engine test plans in support of AEDC's role as the Responsible Test Organization (RTO) for CIP uninstalled engine test. (see AFI99-101)

1.1:2.6 Work with government counterparts to achieve and maintain high customer satisfaction. Support the Government project manager:

- Identify a customer's principle needs and interests.
- Manage a customer's expectations to avoid surprises.
- Solicit feedback and use it constructively to improve customer service.

1.1:2.7 Work continuously to improve test techniques, procedures, and processes. Maintain records of "lessons learned".

- Provide improvement requirements to PWS 2.1.

1.1:2.8 Analyze and compare all source (Top Secret/Secret Compartmentalized Information) data on foreign scientific and technical capabilities.

- Determine the function, design, and performance characteristics of foreign environmental test facilities and other military or terrorist related infrastructure.
- Research weapon development throughout the lifecycle.
- Determine the role of environmental facilities in the foreign system development and acquisition cycle and forecast trends.
- Evaluate foreign facility test techniques and concepts for possible AEDC use.
- Provide STINFO support.

1.1:3 DIRECTIVES:

1.1:3.1 Mandatory:

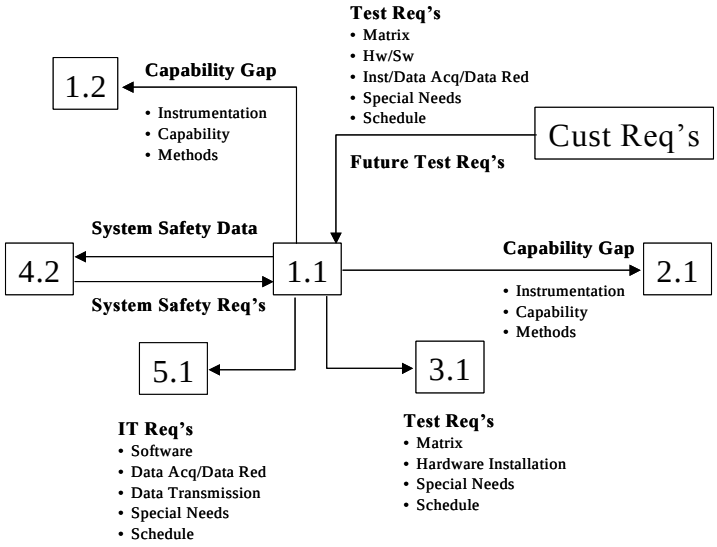
DODD 3200.12	DOD Scientific and Technical Information Program
22 CFR 120-130	International Traffic in Arms Regulations
AFI16-201(C)	Disclosure of Military Information to Foreign Governments and International Organizations (U)

1.1:3.2 Guidance:

DoD Directive 3200.11	Major Range and Test Facility Base (MRTFB)
AFI63-101 (draft)	Reality Based Acquisition (and successor documents)

DoD Instruction 5000.1 and 5000.2 interim guidance and successor Instructions on the Defense Acquisition System

1.1:4 PRINCIPAL RELATIONSHIPS: The successful accomplishment of any test project is dependent on effective management involving extensive communication, coordination, cooperation, and integration of all support providers.



1.1:5 STANDARDS OF PERFORMANCE:

Figure 1.1-1 SERVICE DELIVERY SUMMARIES
Test Products

Performance Objectives	PWS Paragraph	Performance Expectation
Accurate assessment of the scope of proposed T&E projects; application of optimum test methodologies and data analysis tools.	1.1:2.2	No more than 2% of negotiated customer test objectives are missed as a result of ill-defined requirements, missing support equipment, incorrect data acquisition/ reduction techniques, and/or the improper selection of data analysis tools.
Timely and complete planning and coordination of all T&E requirements with support organizations. Particular attention is given to AF coordination.	1.1:2.3	Major schedules or performance objectives are rarely missed as a result of poor or neglected communication and/or administrative work. Specific measures are unique to individual test facility and test types.
Timely and cost effective execution of all T&E and missile signature projects.	1.1:2.4	Projects are completed within 10% of SOC cost, including negotiated changes. Specific schedule measures are unique to individual test facility and test types.
Complete and accurate validated data.	1.1:2.5	Delivered data is always valid. Validated data is normally delivered to the customer or user within 24 hours of test completion. Exceptions can be negotiated.
Quality customer relations.	1.1:2.6	At least 91% of customer feedback responses indicate AEDC have met or exceeded expectations. Actionable responses to customer issues are identified and actions assigned within 10 days of receipt of comments. Actions are completed by the negotiated deadline.
Quality analysis and reporting of all source information.	1.1:2.8	AEDC/IN Performance Survey scores average 5.5 or greater.

1.2 TECHNOLOGY PRODUCTS

1.2:1 SCOPE: This PWS element contains the management and execution of AEDC's test technology program. It includes the development of new test techniques, instrumentation, analytical methods, and computational modeling and simulation to solve particular test problems or to generally advance the state of the art in test effectiveness and efficiency. Technology projects are performed in support of AEDC testing, for external customers, or in cooperation with other Government agencies or private industry. External customers include contracts awarded under the Small Business Administration's Small Business Innovative Research (SBIR) program. Projects vary widely in magnitude and scientific and engineering disciplines. Projects may include mechanical, electrical, electronic, and aeronautical engineering, optics, basic physics, nuclear physics, computational techniques, information technology, mathematical modeling and more.

1.2:2 REQUIREMENTS: The contractor shall provide all project management and technical support necessary to accomplish effective test technology development in support of the AEDC mission.

1.2:2.1 Develop an Integrated Technology Investment Plan that covers the period of the FYDP. Detailed planning is required for the execution year. (OT-2003-30009)

1.2:2.2 Identify specific technology development projects that will eliminate requirements gaps in facility hardware, software, instrumentation, analytical methods, computational modeling and simulation, and test methodology.

- Participate in efforts to develop and improve techniques for better integrating test knowledge and methods across other DoD T&E centers and developers.
- Document project cost, schedule (milestones), performance objectives, and deliverables.
- Develop technology proposals for Government use. (OT-2003-30010)
- Develop Rough Order of Magnitude (ROM) cost estimates, detailed cost estimates, and activity schedules. (OT-2003-30001) (OT-2003-30002) (OT-2003-30003)
- Develop a SOC describing the details of each technology project and submit to the Government for approval. (OT-2003-30008)

1.2:2.3 Manage and execute technology projects.

- Track, manage, and control project cost, schedule, and technical performance during project execution. (OT-2003-30004) (OT-2003-30006) (OT-2003-30007)
  – Apply Earned Value Management to specific projects as directed by the Government.
  – Notify the appropriate Government representative as soon as practicable of any potential or actual deviations; identify cause(s), cost, schedule, and/or technical impact, and recommended recovery options
- Coordinate all technology activities with the Government representative, customer(s), and support organizations.
  – Report technical progress.
- Assure the applicability and timely transition of technology products including proof-of-concept, prototypes, and spiral development products.
- Assist the Government in the release of project documentation.
- Provide a Technology Program Review. (OT-2003-30034)

1.2.2.4 Maintain continual professional interchange with technology-oriented representatives of industry and government:

- Participate in informational exchange meetings and seminars related to specific technology projects.
- Support outside agencies/organizations in developing technology products consistent with AEDC agreements.

1.2:2.5 Participate in SBIR topic selection, contract award, progress monitoring, and transition of developments with the Government.

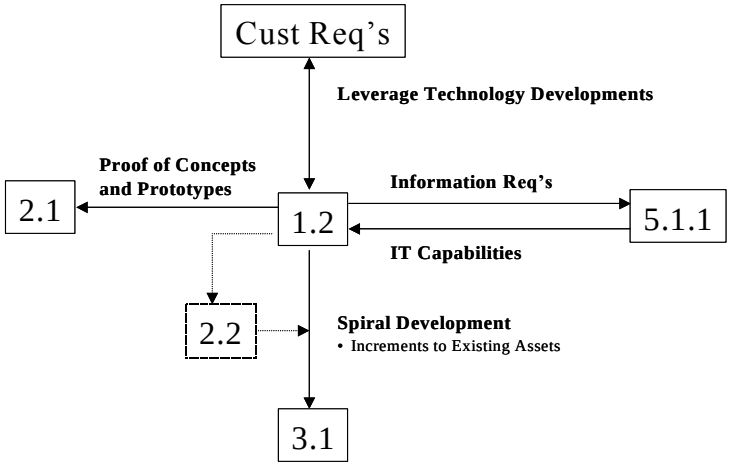
1.2:3 DIRECTIVES:

1.2:3.1 Mandatory:
None

1.2:3.2 Guidance:

PL 97-219	Small Business Innovation Development Act of 1982
PL 99-443	Small Business Innovation Development Act
PL 102-564	Small Business Research and Development Act of 1992

1.2:4 PRINCIPAL RELATIONSHIPS: The successful accomplishment of any test technology task is dependent upon effective management involving extensive communication, coordination, cooperation, and integration of all support providers. Coordinate long-range plans with other long-range planning efforts.



1.2:5 STANDARDS OF PERFORMANCE:

Figure 1.2-1 SERVICE DELIVERY SUMMARY
Technology Products

Performance Objectives	**PWS Paragraph**	**Performance Expectation**
Timely delivery of a quality Integrated Technology Investment Plan.	1.2:2.1,2	Plan is delivered by the required date and adequately addresses all known issues.
Timely and effective execution of technology projects.	1.2:2.3	Projects are completed within 10% of SOC cost, including negotiated changes. (Specific schedule measures are unique to individual projects.)
Quality customer relations.	1.2:2.3,4	At least 91% of customer feedback responses indicate AEDC has met or exceeded expectations. Actionable responses to customer issues are identified and actions assigned within 10 days of receipt of comments. Actions are completed by the negotiated deadline.
Industry leading test technology knowledge and projects.	1.2:2.4	At least 91% of PWS 1.1 & 1.2 customer feedback responses indicate that AEDC has adequately met their test capability needs.

2.1 RDT&E ASSET INVESTMENTS

2.1:1 SCOPE: This PWS element focuses on eliminating capability gaps and ensuring that AEDC possesses the capability to satisfy future customer requirements. This PWS element contains the work necessary to plan, program, and execute investment solutions to meet AEDC's Research, Development, Test, and Evaluation (RDT&E) asset needs. The type of projects to be planned under this PWS element include instrumentation, process control, mechanical systems, structural systems, utility systems, machining equipment, fabrication equipment, laboratory equipment and computer systems for all AEDC test assets listed in Appendices 3.1-1, 3.1-2, and 3.1-3. Future test capability planning and programming responsibilities include concept development, technology applications, validation of investment requirements, spiral development plans of identified technical shortfalls, and assessment of solution alternatives. Work performed in this PWS will include, but is not limited to, efforts funded by the Military Construction Program (MCP), Major T&E Improvement & Modernization (I&M) program, Centralized Test and Evaluation Investment Program (CTEIP), and Major Range and Test Facility Base (MRTFB).

This element further includes the development, implementation, and oversight of systems engineering policies for the technical management of AEDC assets in all PWS elements. These policies provide for an interdisciplinary approach to evolve and verify an integrated life-cycle balanced set of system product and process solutions that satisfy customer needs.

2.1:2 REQUIREMENTS: The contractor shall provide investment planning, programming, and execution of projects/programs to repair, modernize, improve, and acquire RDT&E assets and manage the AEDC systems engineering process.

2.1:2.1 Develop an RDT&E Facility Investment Plan that covers the period of the FYDP (OT-2003-30015). The Facility Investment Plan should provide a holistic view of a solution set and the risks to/impact on the existing AEDC test and evaluation environment. The Facility Investment Plan will contain a well-researched set of options tempered by complete, accurate, decision-quality data delivered within the schedule and cost constraints.

- Manage the requirements development and validation process.
- Perform Capability Review and Risk Assessment (CRRA) for each test capability.
- Compare design capability with current capability.
  - Determine/validate/document capability gaps.
- Propose solutions for meeting future AEDC infrastructure needs. If required:
  - Conduct comparative studies of existing AEDC test facilities with those of other providers.
  - Identify technology investments (PWS 1.2) required to support the proposed solution.
  - Determine economic analysis of gap solution(s) as appropriate.
  - Develop programming justification and supporting technical documentation.
  - Determine operational characteristics and acceptance criteria for integrating the solution into AEDC infrastructure.
- Maintain a continuously updated list of RDT&E Backlog Maintenance and Repair (BMAR) requirements.
  - Perform semi-annual assessments of BMAR requirements.
  - Validate project requirements for maintenance and repair projects (projects which are estimated to cost over $50,000).
- Validate the requirements using the CRRA process.

- Support the integration of the investment solutions into the Center's prioritized requirements list.
- Assist the Government in the release of project documentation.

2.1:2.2 Develop Program Management Plans (PMP) for each major investment as directed by the Government (OT-2003-30013). Deliver a realistic and complete PMP that identifies and addresses technical, fiscal, and resource issues and is structured to satisfy user requirements despite identified boundaries, risks, and constraints. Use a systems approach to define program delivery interface boundaries, ascertain potential implementation risks, identify innovative means for delivery within recognized constraints, create cost estimates, and integrate risk mitigation measures to ensure implementation success and adherence to cost and schedule requirements.

- Document realistic cost, schedule (milestones), performance objectives, deliverables, resource requirements, and verification and validation.
- Coordinate with government counterparts, similar or supporting programs and stakeholders.
- Large projects will require critical path planning, executing and reporting
- Assess potential environmental, safety, and health impacts and coordinate results with activities and policies of PWS 4.2.1, 4.2.2, 4.4.1, and 4.4.2.

2.1:2.3 Manage and execute investment projects/programs. Apply resources that are appropriately skilled to actively assess performance status, proactively manage within the dynamic execution environment and successfully deliver a quality capability within cost and schedule constraints. Prepare technical data packages in accordance with AEDC-ENGR-STDs T-1, T-2, T-3, T-4 and T-5 (OT-2003-30101).

- Plan, track, manage, and control project/program cost, schedule and technical performance during execution. (OT-2003-30102) (OT-2003-30006) (OT-2003-30007)
- Apply Earned Value Management to investment projects as directed by the Government.
  - Notify the appropriate Government representative of any potential or actual deviations; identify cause(s), cost, schedule, and/or technical impact, and recommended recovery options. (OT-2003-30004)
- Coordinate all investment activities with the Government representative and stakeholders.
- Schedule work through the AEDC Consolidated Scheduling Process.
- Provide support to projects and contracts executed by other Air Force contractors.
- Inspect construction and repair projects daily and document status, requirements compliance, and potential issues in a bound logbook, AF Form 1477, Construction Inspection Record. (OT-2003-30016)
- Maintain photographic records of investment projects.
- Deliver "as-built" drawings, manuals, and Operations & Maintenance procedures to the Government. (OT-2003-30017) (OT-2003-30018) (OT-2003-30019)
- Coordinate the acquisition of tools and Test, Measurement, and Diagnostic Equipment with PWS 3.1.
- Assist the Government in the release of project documentation.

2.1:2.4 Consistently apply a documented, disciplined, proven Life Cycle Management (LCM) methodology to all AEDC assets. Current standards and process information is contained in Section H100, "Directive Applicability". Additionally, update and maintain AEDC standards for:

- Systems Engineering.
- Configuration management.

- Identification and tracking of configured systems.
- Assessment of system asset hierarchy and capabilities.

2.1:2.5 Support Civil Engineering (PWS 4.3.1) with the planning, programming, and execution of Military Construction, Minor Construction, and Test Facility Construction programs for RDT&E assets. This includes:

- Program requirements and data for the installation, modification, or relocation of test support equipment using RDT&E funds
- Systems analysis necessary to prepare and defend the Requirements and Analysis Management Plan (RAMP).
- Information and supporting data for the preparation of DD Forms 1391/1391c, Military Construction Project Data.

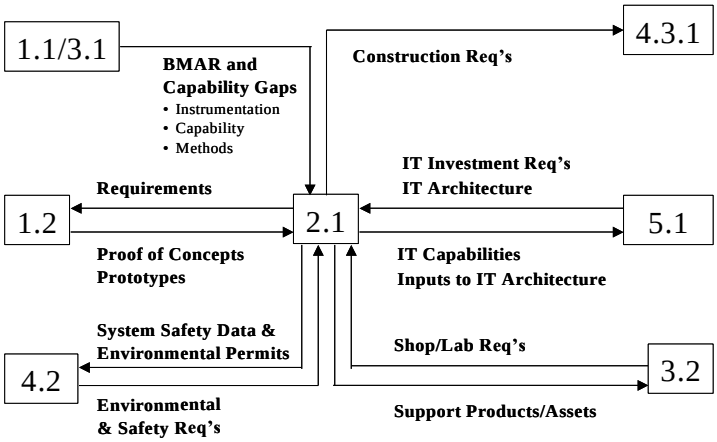
2.1:3 DIRECTIVES:

2.1:3.1 Mandatory: None

2.1:3.2 Guidance:

AFI 32-1023	Design and Construction Standards and Evaluation of Facility Construction Projects

2.1:4 PRINCIPAL RELATIONSHIPS: The successful accomplishment of any test facility investment project is dependent on effective planning and application of the systems engineering process. This involves extensive communication, coordination, and cooperation between all stakeholders.



2.1:5 STANDARDS OF PERFORMANCE:

Figure 2.1-1 SERVICE DELIVERY SUMMARY
Plans and Engineering

Performance Objectives	PWS Paragraph	Performance Expectation

Eliminate validated capability gaps.	2.1:2.1	1) Test facilities are capable of satisfying test customer requirements 2) Performance is within schedule, cost, and quality constraints.
Holistic, well defined set of options to support the PPBS decision-making process.	2.1:2.1	An enterprise-wide solution set with complete, accurate, decision-quality data delivered within schedule and cost constraints.
Realistic and complete PMPs.	2.1:2.2	Delivery of executable PMPs that address technical, fiscal, and resource issues and are structured to satisfy user requirements despite identified constraints.
Proactively manage within the dynamic execution environment to successfully deliver a quality capability within cost and schedule constraints.	2.1:2.3	Cost, schedule, and performance status are actively managed using EVM and quality products are successfully delivered within cost and schedule constraints.
Efficient, effective, and capable application of Life Cycle Management (LCM) to all AEDC assets.	2.1:2.4	Independent audits reveal all assets and planning efforts compliant with LCM methodology standards.
Effective program integration with Civil Engineering.	2.1:2.5	All efforts comply with Military Construction statutes and regulations.

3.1 RDT&E AND TEST SUPPORT ASSETS

3.1:1 SCOPE: This PWS element contains the operations and maintenance of AEDC's RDT&E and Test Support assets to ensure they meet current and future requirements. These assets include all test units (Appendix 3.1-1), plants (Appendix 3.1-2), instrumentation and controls (Appendix 3.1-3), and test support (utility) assets (Appendix 3.1-4). Actual workload of each test unit can vary significantly.

This PWS element further provides a centralized scheduling and coordination function for all PWS elements.

3.1:2 REQUIREMENTS: The contractor shall operate and perform maintenance and repair activities on all RDT&E and Test Support assets.

3.1:2.1 Develop an Integrated RDT&E and Test Support Asset Operations and Maintenance Plan that covers the period of the DoD FYDP, that supports the POM process. Detailed program and activity planning is required for the execution year. AFI 32-1021 and AFI 32-1032 provide guidance on work classification. (OT-2003-30103)

- Identify and prioritize all required maintenance, repair, and performance improvements to meet current and projected operational needs for RDT&E and Test Support assets.
  - Include high visibility preventative maintenance and inspection activities such as pressure and hazardous material systems (PHMS) in-service requirements (ISI).
  - Identify and prioritize systems requiring configuration product baselines. Plan the development of configuration baselines for high priority systems.
- Identify the impacts of requirements not funded and recommend alternatives to satisfy those requirements, including incremental solutions that may be feasible. Alternatives shall include critical timelines for accomplishment.
- Identify program and project milestones, deliverables, cost, schedule, and other quantitative program performance objectives.
- Forecast test utility requirements based on projected workload, and provide forecasts to utility suppliers and the utility manager.
- Propose test asset and utility rates, and provide detailed bases for each.
- Identify customer metering and billing process for utility usage.
- Using historical maintenance records of RDT&E and Test Support facilities, systems, and equipment, identify maintenance and repair work required, and recommend improvements for reliability and maintainability.
- Include Reliability Centered Maintenance (RCM), Condition Based Maintenance (CBM), Machine Condition Monitoring (MCM) and preventive/predictive maintenance (PdM) principles.
- Provide projected requirements and other informational support for government utility contracts (electrical power, natural gas, fuels, potable water).
- Provide a monthly forecast of the resources needed to meet projected test workload, maintenance, and investment program execution for the current FY. Provide updated assessment monthly.

3.1:2.2 Operate and maintain an Operations Center 24 hours a day, 7 days a week.

- Provide integrated command and control for all scheduled, unscheduled, and disaster/emergency/severe weather activities at Arnold AFB and White Oak (Tunnel 9).

- Report current status of all operations/activities to the AF Command Post as changes in status occur.
- Maintain current listings of personnel to contact for notification of disaster/emergency/severe weather situations.
- Assess actual/potential impacts of disaster/emergency/severe weather on test-related activities.
- Provide coordination and tracking for all AEDC operations.
- Provide hourly reporting of all utility usage.
- Document all actions in the Integrated AEDC Operations Center Event Log. (OT-2003-30126)
- Ensure the Battle Staff is in a response-ready condition for activation and use at the direction of the AEDC/CC. Organize, train, and direct the Battle Staff Support Team and ensure checklists, materials, and quick-reference binders are available and updated.

3.1:2.3 Schedule all asset-related activities including outages and curtailments. The contractor may utilize the current AEDC Consolidated Scheduling Process or provide an alternative AEDC Consolidated Scheduling process. Report the difference between Government-approved two-week schedule and actual performance.

- Develop and maintain a current integrated Long Range (FYDP), annual, 90-day, two-week, weekly, and daily schedule. Provide these schedules on the AEDC intranet. (OT-2003-30104)
- Include forecasts of test project resources, maintenance resources, investment execution resources, and utility requirements.
- Track lost test time, lost activity time, schedule effectiveness, late starts, and other indicators of scheduling performance.

3.1:2.4 Operate and maintain RDT&E and Test Support assets.

- Perform operational inspections and maintain assets in accordance with preventive/predictive maintenance (PdM) principles:
  - Include Reliability Centered Maintenance (RCM), Condition Based Maintenance (CBM), Machine Condition Monitoring (MCM) utilizing Mean Time Between Failure (MTBF) and Mean Time to Repair (MTTR) data.
- Document maintenance schedules and procedures.
  - Evaluate equipment failures using root cause analysis and perform preventive measures to preclude recurrence.
- Perform Systems Safety Hazard Analysis (SSHA) on all assets. (PWS 4.2.2:2.4)
- Support work performed in Section 2.0 of this PWS to certify PHMS by providing access, technical information, scheduled outages, submittal reviews, as well as implementing in-service inspection plans.
- Maintain certification of PHMS in accordance with AEDC-ENG-STDS T-1/T-2.
- Coordinate annual boiler inspections with the Government.
- Maintain assets in operational, stand-by, mothballed or non-operational status as directed by the Government. Provide reactivation procedures, timelines, and cost to restore full operational capability when required.
- Perform configuration management. Track progress towards bringing all AEDC test cell, plant, and utility assets into compliance with AEDC Standard CM-1.
- Maintain control systems and instrumentation in coordination with PWS 5.1.

- Install, operate, and maintain test peculiar systems to satisfy individual test project requirements in coordination with PWS 5.1. These systems may include instrumentation, controls, data acquisition, data reduction, and data processing.
- Provide the maintenance management information for all AEDC assets required to plan, schedule, and manage logistics / maintenance activities in a cost effective manner. Document all maintenance activities using a Computerized Maintenance Management System (CMMS). (OT-2003-30020)
- Perform test article receipt inspection, acceptance, preparation, installation, and removal to accomplish test objectives.
  - Support rocket motor health assessments as necessary using x-ray images taken at the user's facility and upon delivery at AEDC.
- Maintain operational and maintenance logs including details explaining the cause of operational interruptions, time and impact of interruption, duration, and remedy. Logs include:
  - Daily Operating Log Summaries
  - Test Facility Utilization Reports/Test Resumes: Report the checkout, installation, testing and removal activities that occur in all scheduled test facilities daily. The report shall be the basic input document for the daily test facility utilization report. It shall also be used as the basic document supporting and submitted with incident reports. The report shall include the following as applicable for the day's activities: a description of the daily activities in scheduled test facilities, start and end time of significant activity (running log of significant events), operating shift hours scheduled and accomplished, objectives accomplished (specific objectives accomplished and % of planned objectives accomplished), reasons scheduled objectives were not accomplished, unusual occurrences or findings, user or sponsor directives for test article or test program changes, productive and non-productive time, primary and secondary data obtained (% of planned), and discrepancies. The report shall include both daily and cumulative data for the scheduled activity. The report shall be maintained and available on-line via the AEDC intranet.
  - Test Unit Status Logs: A Test Unit Status Log (TUSL) shall be maintained for each test unit. The TUSL will provide an up-to-date status listing of work activities that affect the operational capability of the test unit. The TUSL is the primary work control document to prepare for testing, to test and secure the test unit, and will also be used as the primary configuration status accounting document for the test unit. Each team involved in testing, test support, and maintenance is responsible for logging TUSL information in their respective areas of responsibility. The TUSL will be used as a continuously running log to document test unit build-up work, information for future tests, carryover work information, delayed work, configuration changes, non-conformances, uncorrected discrepancies, and maintenance. Work entered in the TUSL will include a sufficient description of the work activity to "stand alone" or these items will reference other work documents such as Synergen work requests and work order tasks. The TUSL shall be maintained and available on-line via the AEDC intranet.
- Provide on-time delivery of clean, dry fuels and cryogenics in accordance with TO 00-25-172, TO 37-1, and AFI 23-201.
- Maintain the Operational and bulk Fuel distribution Systems including Storage Tanks in accordance with UFC 3-460-03.
- Account for fuels and cryogenic use and input fuel data in the Fuels Automated System (FAS) in accordance with AFMAN 23-110 and DODMAN 4140-25.
- Administer Fuels Quality Control & Inspection Program in accordance with TO 42B-1-1.

- Immediately notify the Contracting Officer or designated representative of any suspected contaminated or off-specification fuel.
- Update the Government bulk fuels storage facilities computer generated report. (OT-2003-30106)

- Maintain operating logs to support the requirements of the AEDC Title V Major Source Operating Air Permit.
- Develop and report the Infrastructure Condition Index (ICI) for RDT&E and Test Support facilities in support of PWS 4.3.1.
- Support the preparation and execution of the Adverse Weather Protection Plan in conjunction with PWS 4.3.2. (OT-2003-00069)
- Assure tools, TMDE, instrumentation, and data acquisition systems are calibrated as necessary to accomplish T&E requirements consistent with AFTO 00-20-14, Section 3.6 and any approved waivers.
- Document the calibration of "in place" systems in accordance with the AEDC Calibration Measurement Summary (CMS). Update and maintain the CMS in accordance with the applicable provisions of MIL-STD-1839C. (OT-2003-30026)
- Analyze and document measurement and control system uncertainties.
- Apply Earned Value Management to projects as directed by the Government. (OT-2002-30004)

3.1:2.5 Maintain accurate and up-to-date performance maps, operating procedures, maintenance instructions, TMDE calibration data, configuration data and current technical documentation on all assets in accordance with PWS 2.0.

3.1:2.6 Manage and control all tools in accordance with ~~AFMCI 21-107 and any approved waivers.~~ AFI 21-101 Chapter 13 (except Paragraph 13.4) and AFI 21-101 AFMC Sup 1, Chapter 13.

3.1:2.7 ~~Develop~~Manage and execute aggressive Foreign Object Damage (FOD)~~/Dropped Object~~ prevention in accordance with AFI 21-101 Chapter 18, paragraph 18.23 thru 18.23.10.1.13~~processes~~.

- Immediately investigate incidents for root cause, and take appropriate corrective actions to prevent reoccurrence.

3.1:2.8 Support the Government airfield manager on an as needed basis in conducting airfield operations

- Coordinate activities with the AF Command Post.
- Coordinate ground transportation support, fuel, security, parking, emergency response, and fire protection.

3.1:2.9 Provide support as required to the Government RDT&E and Test Support manager. As a minimum:

- Support the Government utilities manager in contract acquisition of supplied utilities (electricity, natural gas, fuels, and water).
- Recommend changes to utility contracts to optimize utility and test operations.
- Participate in working groups and energy forums at the request of the Government.
- Maintain registration of AEDC as liaison member of the Tennessee Valley Industrial Committee (TVIC)

- Provide the Tennessee Valley Authority with electrical power forecasts. (OT-2003-30012). Report utility account status for: electrical power, raw water, natural gas, test fuels, steam, potable and wastewater. Breakout costs for operations, maintenance, supplier costs, and taxes when applicable. Compare actual cost and usage against baseline FY planned cost and usage.
- Participate with the Reliability Maintenance Center (RMC), other maintenance professional organizations, and other Government agencies to benchmark and share best practices.
- Provide support to the Arnold AFB Utilities Privatization project.

3.1.2.10 Perform housekeeping to assure personnel operating and maintaining test cells, plants, and utilities have a safe and clean work space.

3.1:3 DIRECTIVES:

3.1:3.1 Mandatory:

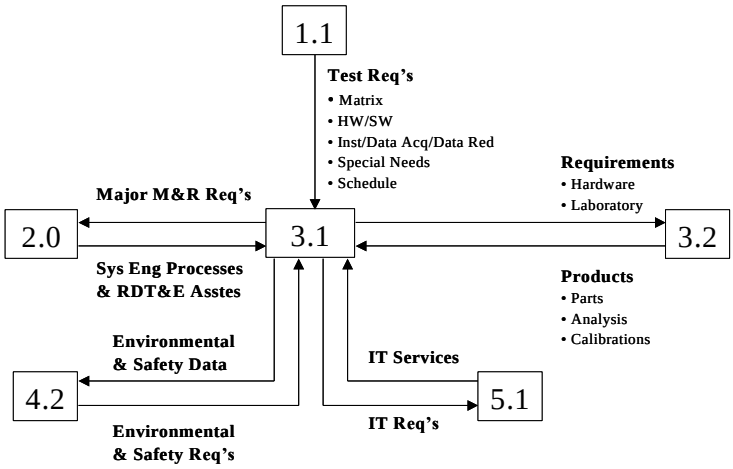
TO 00-20-14	Test Measurement and Diagnostic Equipment (Section 3.6)
TO 42B-1-1	Quality Control of Fuels and Lubricants
MIL-STD-1839C	Standard Practice for Calibration Measurement Requirements
AFMAN 23-110	Air Force Stock Fund and DPSC Assigned Item Procedures
AFOSH 91-38	Hydrocarbon Fuels
TO 00-25-172	Ground Servicing of Aircraft Static Grounding and Bonding
TO 37-1-1	General Operation and Inspection of Installed Fuel Storage and Dispensing Systems
UFC 3-460-03F	Maintenance of Petroleum Systems
AFI-23-201	Fuels Management (The following chapters/sections do not apply:)
	1.9 Augmenting Personnel
	1.12 Using Hydrants
	5.4 Designated Operational Capability (DOC) Statements
	5.7 Preparing Fuel Support Plans
	5.8 Reviewing the War and Mobilization Plan (WMP)
	5.9.2.1 Maintaining Propositioned War Reserve Stock (PWRS)
	5.11 Maintaining Emergency Power Capability
	5.14 Computing Refueling Equipment Authorizations
	5.16 Understanding the Management Engineering Program (MEP)
	6.1.10 Duties of the Fuels Operation Superintendent
	6.4 Duties of the Hydrant Supervisor
	7.12 Duties of the Flight Mobility Supervisor
	Chapter Fuels Mobility Support
DODM 4140.25	DOD Management of Bulk Petroleum Products
AFI 21-101 & AFMC Sup 1	Aerospace Equipment Maintenance Management Chapter 13 Tool Control (except Paragraph 13.4) and Chapter 18 Foreign Object Damage (FOD) thru Section 18.10.1.13

3.1:3.2 Guidance:

AFI 32-1021	Planning and Programming of Facility Construction Projects

AFI 32-1032	Planning and Programming Real Property Maintenance Projects Using Appropriated Funds (APF)
AFMCI 21-103	Reliability-Centered Maintenance Programs
AFI 13-213	Airfield Management
AFI 91-202	The US Air Force Mishap Prevention Program.
AFMCI 121-122	Foreign Object Damage (FOD) and Dropped Object (DO) Awareness and Prevention Program

3.1:4 PRINCIPAL RELATIONSHIPS: The successful accomplishment of the test asset operations and maintenance effort is dependent on effective management involving extensive communication, coordination, cooperation, and integration of all support providers.



3.1:5 STANDARDS OF PERFORMANCE:

Figure 3.1-1 SERVICE DELIVERY SUMMARY
RDT&E Assets

Performance Objectives	PWS Paragraph	Performance Expectation
On-time delivery of a complete and accurate Integrated RDT&E and Test Support Asset Operations & Maintenance Plan.	3.1:2.1	Deliver a complete integrated plan that accurately identifies at least 95% of current year requirements and 80% of future year requirements to support the Government provided workload.
Efficient and effective command and control, communication, and coordination.	3.1:2.2	Timely, accurate direction, tracking and reporting of all asset-related activities and resources.
Efficient and effective scheduling of all asset-related activities and resources.	3.1:2.3	90% of daily test and plant activities are planned and executed as scheduled.

Effective and efficient test operations and maintenance support that meets customer expectations, and satisfies current/future requirements.	3.1:2.4,8	Meet 98% of performance requirements as defined in the approved SOCs within +/- 5% SV and CV in accordance with Government provided workload to support test operations. Execute the Operations and Maintenance Plan within +/- 5% CV and SV. Meet a Proactive Maintenance level of 75%. Maintain system availability, when required, at the following rates: • Plant - 95% • Utilities - 99% • Test - 95% Maintain LTT of no more than 5%.
Effective management of all procedures, instructions, drawings and asset related data.	3.1:2.5	Asset configuration data, and drawings are current and accurate. O&M procedures shall reflect current asset configuration(s).
Effective Airfield operations and management	3.1:2.8	Support all airfield activities.
Timely and accurate contract data delivery.	3.1:2	Data submitted per the Contract Data Requirement List will be on time and 98% accurate.

3.2 MACHINE AND FABRICATION AND LABORATORY ASSETS

3.2:1 SCOPE: This PWS element includes all facets of machine and fabrication and laboratory support to test and base functions. Work includes machining, calibrations, maintenance, certifications, testing, inspections, and analyses which may range from simple tasks requiring less than one man-hour to major projects involving several hundred man hours. Shops and laboratories included are:

- All RDT&E machine and fabrication assets, the Precision Measurement Equipment Laboratory, the Chemical Laboratory, and the Metallurgical and Non-Destructive Examination (MET/NDE) Laboratory as described in Appendix 3.1-5.

3.2:2 REQUIREMENTS: The contractor shall operate maintain and repair all shop and laboratory assets:

3.2:2.1 Develop a Machine and Fabrication Shop Management Plan and a Laboratory Management Plan that covers the period of the FYDP. Detailed planning is required for the execution year. (OT-2003-30107)

- Identify and prioritize all required maintenance, repair, and performance improvements to meet existing and projected operational needs
- Identify the impacts of unfunded requirements and recommend alternatives to accomplishing the work. Impacts shall include critical timelines for accomplishment.
- Identify program and project milestones, deliverables, cost, schedule, and other quantitative program performance objectives.
- Evaluate historical maintenance records of support facilities, systems, and equipment.
- Identify maintenance and repair work required, establish critical replacement part and material stock levels, and recommend improvements for reliability and maintainability.
- Incorporate preventive/predictive maintenance principles.
- Provide inputs to the PWS 4.3 Base Support Assets Investment Plan for Appropriation 3400 resources.
- Apply Earned Value Management to specific tasks as directed by the government. (OT-2002-30004)

3.2:2.2 Submit for calibration all equipment necessary to accomplish Machine and Fabrication Shop and Laboratory requirements consistent with TO 00-20-14, Section 3.6 and any approved waivers or recommend waivers.

3.2:2.3 Develop and implement a process that ensures "best value" shop and laboratory services. Considerations should include as a minimum: in-house cost versus out-source cost, schedule, and retention of critical skills.

3.2:2.4 Operate and maintain the Machine and Fabrication Shop.

- Perform machining, welded and bolted fabrication, electron beam welding, metal forming, and related services.
- Fabricate, repair, alter, and maintain all pressure vessels and relief valves/devices, whether stamped or unstamped, in accordance with AEDC-ENGR-T-STDs.
  - Register new vessels with the National Board.
- Perform hydrostatic and pneumatic testing in accordance with AEDC-ENGR-STDs T-1 and T-2.

3.2:2.5 Operate and maintain a certified USAF Type IIC PMEL in accordance with AF T.O. 00-20-14 and any approved waivers. (DI-MISC-80158A) (DI-QCIC-81611) (DI-QCIC-81111B). Report the progress of PMEL activities against plan. (DI-MGMT-80227)

- Perform the calibration and maintenance of test, measurement, and diagnostic equipment in the areas of infrared to ultraviolet optical radiometry, nuclear radiation, high vacuum technology, pressure, force, sound, acceleration, vibration, gas and liquid flow, dimensional, electrical and electronic metrology from DC to microwave, and temperature from cryogenics to pyrometry.
- Calibrate and certify TMDE using calibration intervals and procedures listed in T.O. 33K-1-100 unless the item meets the criteria for a limited calibration listed in T.O. 00-20-14 and any approved waivers.
- Perform on-site calibration services when:
  - Physical size would prohibit movement to the laboratory.
  - The item must be calibrated or serviced as part of a system.
- Develop and use calibration standards when suitable standards are not available.
- Maintain TMDE technical orders in accordance with T.O. 00-5-1 and T.O. 00-5-2.
- Provide engineering support and error analysis in accordance with AEDC-ENGR-STD T-6 for PMEL calibration systems and calibrated TMDE.
- Obtain and maintain licenses and certificates required by state and federal laws for the calibration, repair, alignment, or possession of radioactive sources.
- Manage calibration work using LABMET (which will be replaced by PAMS in Spring 2003) and a computerized maintenance management system.
- Maintain a TMDE database to track physical equipment and calibration requirements.

3.2:2.6 Operate and maintain the Met/NDE Lab.

- Perform materials testing; weld process and welder certification, concrete testing, radiographic inspections, magnetic particle inspections, liquid penetrant inspections, helium mass spectrometer leak testing, and ultrasonic inspections.
- Review project designs for compliance with applicable codes and standards.
- Ensure design compliance by reviewing NDE procedures, reports, radiographic film, material specifications, and welding documentation codes/specifications.
- Conduct investigations to determine the cause of mechanical component failures.
- Perform field inspections of rotating machinery and other plant equipment.
- Provide field concrete inspection services, including determination of slump and air entrainment and preparation of cylinders for compressive strength.
- Conduct radiographic inspections of solid rocket motors and associated components in accordance with manufacturer's specifications.
- Analyze particles from rocket motor exhaust to determine size, shape, and chemical composition.
- Analyze particles from turbine engine chip detectors.
- Perform in-process and final weld inspections of components and assemblies.
- Maintain inspection and certification records.

3.2:2.7 Operate and maintain a chemical laboratory.

- Analyze fuels, new oils, waste oils, soils, various liquids and gases, liquid rocket propellants, exhaust gases from test cells, materials containing asbestos (bulk, filter, and

- sorbent tube), water, fish tissues, air (samples from clean rooms and breathing air compressors), and plastics.
- Provide gas mixtures of known composition for calibration of test cell instrumentation and other purposes.
- Perform analysis in accordance with the following:
  - Asbestos work: Certification by the American Industrial Hygiene Association
  - Water analysis: National Pollutant Discharge Elimination System permits using Environmental Protection Agency (EPA) approved methods
  - Hazardous waste sample analysis: approved Resource Conservation and Recovery Act (RCRA) and EPA methods to determine hazardous organic and inorganic constituents, toxicity, flammability, and corrosivity.
  - Drinking water analysis: State and EPA regulations and certification by the State of Tennessee
  - PCB sample analysis: EPA-approved methods.
- Participate in performance evaluation studies conducted by the EPA and the State of Tennessee.
- Maintain a Chemical Safety and Hygiene Plan in accordance with the Occupational Safety and Health Administration Laboratory Standard 1910.1450.
- Maintain a quality control program using the EPA Region 4 Quality Assurance manual as a guide.
- Maintain gas chromatography detectors containing radioactive substances and attendant documentation in accordance with state regulations.

3.2:3 DIRECTIVES:

3.2:3.1 Mandatory:

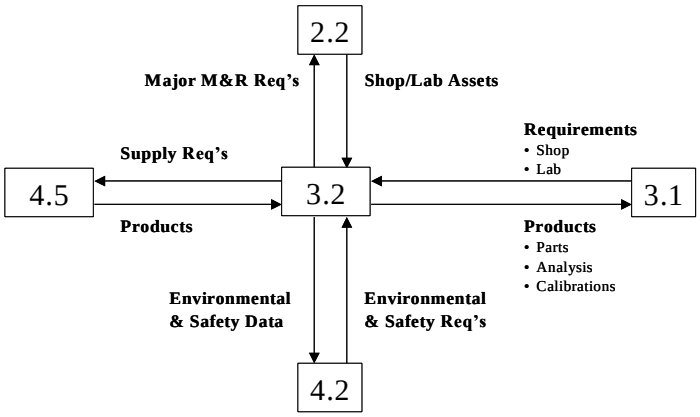
T.O. 00-20-14	AFMETCAL Program
T.O. 33K-1-100-1	TMDE Interval, Calibration, and Repair
T.O. 33K-1-100-2	TMDE Interval, Calibration, and Repair
TO 00-5-1	Air Force Technical Order System
ANSI NB-23	National Board Inspection Code
OSHA Standard 1910.1450	Occupational Exposure to Hazardous Chemicals in Laboratories

3.2:3.2 Guidance:

T.O. 42-B-1-1	Quality Control of Fuels and Lubricants
T.O 33-1-37 Vols 1, 2, 3, 4, 4IRAC1	Joint Oil Analysis Program Manual
AFI 21-113	Air Force Metrology and Calibration (AFMETCAL Program
AFI 32-1021	Planning and Programming of Facility Construction Projects
AFI 32-1032	Planning and Programming Real Property Maintenance Projects Using Appropriated Funds (APF)

EPA Region 4 Quality Assurance Manual

3.2:4 PRINCIPAL RELATIONSHIPS:



3.2:5 STANDARDS OF PERFORMANCE:

Figure 3.2-1 SERVICE DELIVERY SUMMARY
Shops and Laboratories

Performance Objectives	PWS Paragraph	Performance Expectation
On-time delivery of complete and accurate management plans for both Machine and Fabrication Shop & Laboratory Support.	3.2:2.1	Deliver a complete, integrated plan that accurately identifies 95% of current year requirements and 80% of out-year requirements to support the Government provided workload.
Maintain calibrated TMDE.	3.2:2.2/3.2:2.5	Satisfactory TMDE audits.
Provide quality "best value" services.	3.2:2.3	Favorable comparisons with outside sources on "make-buy" reviews
Certified USAF Type IIC PMEL.	3.2:2.5	Satisfactory AFMETCAL periodic certification audits.
Efficient and Effective execution of shop and laboratory services.	3.2:2.3-7	Complete planned tasks within +/- 5% CV and SV-.

4.1 SECURITY

4.1.1 SECURITY FORCES

4.1.1:1 SCOPE: This PWS element contains the work and materials necessary to provide AEDC security, law enforcement and antiterrorism/force protection services to protect people, property, and information. The Contractor is responsible for all aspects of law enforcement, security, and force protection at AEDC, including limited responsibilities at the White Oak Facility located in Silver Springs, Maryland and the National Full-Scale Aerodynamics Complex (NFAC) in San Jose California.

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4.1.1:2 REQUIREMENTS: The Contractor shall develop, manage, and maintain all base-wide security, police/law enforcement services, and antiterrorism/force protection programs consistent with mandatory federal, state, DoD, and Air Force standards, as supplemented. Secure all delegated classified matter, protect all AEDC resources, and implement and manage a Combat Arms Training and Maintenance program.

4.1.1:2.1 Provide full-time, armed, uniformed, fully qualified security and police/law enforcement personnel. Personnel shall be armed with Government firearms and ammunition, and:

- Be professionally trained.
- Maintain high personal standards in behavior and appearance.
- Possess a valid State of Tennessee Driver's License.
- Have no criminal history record that precludes employment as a law enforcement officer.
- Possess at least a Secret security clearance.
- Perform no work on this contract until an internal favorable preliminary suitability determination has been conducted and a SF Form 86, Personnel Security Questionnaire has been submitted to DISCO.
- Be in good general mental and physical health, without permanent physical defects or handicaps, which would interfere with performing all assigned duties, including standing for prolonged periods.
  - Physical fitness exams shall be administered and standards certified by a licensed physician prior to the employee's assignment as a member of the contract security forces and, as a minimum, annually thereafter.
  - Maintain such certifications (Certificates of Medical Examination) for AEDC Air Force review.

4.1.1:2.2 Seek agreements with the appropriate officials to have each armed employee deputized in Coffee and Franklin Counties, Tennessee, with sufficient authority to detain or make arrests for violations of law occurring on Arnold AFB. If completed and when required:

- Assure that each employee carries a firearm permit.
- Provide for any official bond.
- Pay any fees or costs involved or related to the appointment.
- Maintain copies of licenses and permits.

4.1.1:2.3 Normal security force duty hours are an 8-hour shift. Certain contingencies may require Security Forces personnel to transition into 12 hours shifts. When 12 hours shifts are required, a work-rest cycle must be ~~establish~~ed ~~-~~of not more than 6 days on with 1 day off. No security force member shall work more than 12 continuous hours on any tour of duty and shall

have a minimum of 12 hours off duty between tours. Security augmentees should be use to the fullest extent possible during contingencies. The Contractor Chief of Security Forces may waive this requirement in emergency situations after concurrence from the Government representative.

4.1.1:2.4 Comply with Government rights to direct the contractor to remove from security force/police-related duties any person who has been identified as a potential threat to the good order and discipline, health, safety, operational resources and/or the general well-being of AEDC and its population. The Government also retains the right to direct the contractor to remove an employee from security forces-related duties for reasons of misconduct, violations of security, or violations of the Performance Work Statement.

4.1.1:2.5 Identify, train, and use as required, (currently twenty-eight (28)) Security Force augmentees who shall be available to meet all Force Protection Conditions (FPCON) changes as well as any unscheduled and special contingency requirements. They shall be uniformed, trained and equipped in accordance with the guidance of AFI 31-101, 31-201, 31-2225, 31-2226, and 31-207.

4.1.1:2.6 Maintain a Security Forces Training and Standardization Evaluation Program and Combat Arms Training consistent with AFI 36-2225, AFI 36-2226 as supplemented, and AFMAN 36-2227 VI, chapters 1 and 2.

- Include small arms marksmanship training for firearms issued on the Center (Currently M-9, MP-5, and P228 handguns, M-16 and M-4 rifles).
  - Conduct training using qualified marksmanship instructors.
- Perform minor maintenance and inspection of weapons in accordance with applicable AFTOs.
- Perform pre-embarkation inspection per Technical Order for applicable weapon.
- Perform CATM supply management and bench stock.
- Order equipment and maintain records of all security forces supplies and equipment. Maintain AFTO Form 105 on each weapon in accordance with Air Force Technical Order 1W-1-10.
- Prepare and submit RCS/HAF Combat Arms Program Report.
- Maintain the firearms storage facility (SF Armory) consistent with AFI 31-101 and applicable technical orders and other directives listed as mandatory within this Performance Work Statement.
- Provide training, consistent with Air Force and state standards, on the expandable baton.

4.1.1:2.7 Implement Antiterrorism/Force Protection Standards in accordance with DODI 2000.16 and AFI 10-245, as supplemented.

- Secure necessary agreements to ensure friendly forces response and support to various contingencies. When possible secure these agreements in writing.
- Provide assistance to civilian law enforcement authorities IAW AF policy.
- Classify associated documents using appropriate classification guides.
- Conduct resources protection surveys, vulnerability assessments, and provide force protection oversight at the AEDC White Oak Facility and the National Full-Scale Aerodynamics Complex (NFAC) in San Jose, California.

4.1.1:2.8 Provide and operate a Security Forces Control Center, 24 hours/day, seven days/week:

- Man the Center with personnel who are fully qualified and certified consistent with AFI 36-2225 as a desk sergeant and alarm monitor.

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- Provide an alarm manager/specialist, 8 hours/day, 5 days/week:
- Manage and oversee the overall operation and testing of alarms, Automated Entry Control Systems, and Closed Circuit Television systems.
- Qualify and certify personnel consistent with AFI 36-2225.
- Acquire, operate, and maintain a Tennessee Information Enforcement System (TIES) Terminal.
  - Provide at least one security force member with required certification as a Terminal Agency Coordinator (TAC).
  - Ensure terminal operators are certified.
  - Procure the terminal and subsequent access through state/local sources.

4.1.1:2.9 Maintain security and police/law enforcement operations consistent with local, state, Air Force, and federal laws.

- Immediately notify the AEDC Command Post of any serious incidents in accordance with a Government provided matrix.
- Develop internal operating instructions to cover all duties and responsibilities accounting for special contingencies and higher force protection conditions.
- Ensure all posts and patrols are manned according to Government-approved priority post listing. (Posts below represent typical day-to-day requirements)
  - Operate one equipped, mobile patrol, 24 hours/day, 7 days/week, who shall direct and supervise activities for flight/security forces, including guard mount/roll call.
  - Operate one equipped, mobile patrol inside the mission area, 24 hours/day, seven days/week.
    - Inspect the classified computer lines at least once each week. Fully inspect all lines and surrounding areas, manholes, and locks. Record weekly checks in the security forces blotter.
  - Operate one equipped, mobile patrol outside the mission area, 24 hours/day, seven days/week, covering all areas outside the fence.
  - Operate an additional patrol after normal duty hours. Normal duty hours are from 0730 –1600, Monday through Friday.
  - Operate one Canine (K-9) Police Patrol, during hours determined by the Chief of Security Forces, consisting of one handler and one specially trained Explosives Detection canine. The K-9 Patrol shall be subject to call in the event of emergencies or special events, when available. Base the K-9 and handler's schedule on a 40-hour weekly cycle.
    - The contractor shall procure, house and care for the K-9. Kennels are not/will not be available on AEDC
    - The contractor shall ensure compliance with the federal and state laws governing the use and application(s) of detection canines, and legal certifications for the use in court proceedings.
  - Operate two radio-equipped motorized All Terrain Vehicle patrols on a random basis, not to exceed 8 hours a day, 5 days a week between Memorial Day to Labor Day.
  - Operate a two-person, equipped boat patrol 8 hours a day each Saturday and Sunday from Memorial Day to Labor Day, to enforce activities on Woods Lake. In addition, operate the boat patrol on a random basis through out the year, as determined by the Chief, Security Forces and the government representative.
    - Seek agreements with the Tennessee Wildlife Resources Agency for each armed employee to be granted authority to detain or make arrests for violations of law occurring on Woods Reservoir.
    - Maintain copies of TWRA licenses and permits.

- Implement additional interior/exterior patrols as required.

4.1.1:2.10 Conduct and manage a Security Forces Investigations program consistent with the spirit and intent of AFI 31-206, as supplemented, and in accordance with applicable federal, state and local laws. Consult with the government representative when Air Force program requirements conflict or differ with local or state practices.

4.1.1:2.11 Process incident complaint reports, traffic citations, crime analyses, and input and maintain Security Force Management Information Systems data.

4.1.1:2.12 Provide continuous ingress and egress control to AEDC at the following entry points:

- Main Gate, 24 hours a day, 7 days a week
- Arnold Military Family Housing Gate, 24 hours a day, 7 days a week
- Gate 2 from 5:30 a.m. to 5:30 P.M. Monday - Friday, except holidays. This gate is the designated point for processing all military and commercial deliveries. Between 5:30 a.m. and 2:30 p.m. Monday – Friday, except holidays, assign one additional person to this gate to perform additional screening and inspection of designated vehicles consistent with DoD and Air Force anti-terrorism requirements.
- Gate 1, or other designated strike gate, when determined by the government representative.

4.1.1:2.13 Operate a pass and registration/visitor control function (classified and unclassified) consistent with policy and procedures outlined in DoD 5220.22-M, AFI 31-101, AFI 31-501, AFI 31-601, local center instructions and supplements.

- Pass and registration shall be open from 6:30 a.m. to 3:30 p.m., Monday – Friday, except holidays
- Perform fingerprint services for all U.S. Government employees, contractors, and user agency personnel who are visitors or tenants at AEDC.

4.1.1:2.14 Establish and manage the Installation Security Section (ISS) that combines physical security, resource protection, and anti-terrorism staff functions into a single section under the force protection operations branch. The ISS shall be the focal point for all installation level security plans, installation security program reviews and training of designated security focal points on items such as anti-robbery procedures and other requirements as determined locally. The ISS also conducts resources protection and physical security surveys, vulnerability assessments, and is the responsible activity for implementation of Integrated Base Defense (IBD) initiatives aimed at providing full dimensional protection for personnel and resources. IBD will adhere to the traditional principles of defense, but allow for the introduction of new technologies. Additionally the section is responsible for:

- Managing all electronic security systems and Intrusion Detection Equipment on Arnold AFB IAW higher headquarters directives including Perimeter Surveillance Radar (PSRS), Man-Portable Surveillance Target Acquisition Radar (MSTAR), Wide-area Surveillance Thermal Imagers (WSTI), Pan-tilt-zoom camera systems and Sensor Technologies and Systems (STS) software annunciation platforms.
- Maintaining continual knowledge of future technology as approved by higher headquarters for use in security applications.
- Tracking and coordinating maintenance and operation of all IDE and IDS to ensure optimal systems performance.
- Advising the Installation Security Council (ISC) on intrusion detection equipment and system requirements and activities.

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- Preparing reports, operating instructions, and installation instructions for implementation and approval.
- Ensuring all new alarm system applications are coordinated as required.
- Conducting training with resource managers, dispatchers, and users throughout the installation.
- Conducting inspections, exercises, and testing to ensure compliance with directives.
- Maintaining database and filing system to track projects for all systems and initiatives.
- Maintaining a filing system to track projects and completions and historical events.
- Maintaining proficiency to answer all alarm system questions from users.
- Reviewing Installation Security Plan as technical consultant.

4.1.1:2.15 Provide an overnight storage capability located on AEDC approved for safeguarding classified material, up to the secret level, for use by Center visitors and transitory personnel. Advertise this capability at key visitor reception points.

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4.1.1:3 DIRECTIVES:

4.1.1:3.1 Mandatory: (Includes all supplements)

Joint Pub 3-54	Joint Doctrine For Operations Security
DoD 5220.22-M	National Industrial Security Program Operating Manual
DoD 5200.1-R	Information Security Program - Chapters 3-7 and 10.
DODD 2000.12	DOD Combating Terrorism Program
DODI 2000.14	DOD Combating Terrorism Program Procedure
DODI 2000.16	DOD Combating Terrorism Program Standards 2-7 and 9-33
DOD O-2000.12H	Protection of DOD Personnel and activities against Acts of Terrorism and Political Turbulence
AFI 10-245	The Air Force Anti-Terrorism Program (as supplemented)
AFI 10-1101	Operations Security, as supplemented
AFPD 31-2	Law Enforcement
AFI 31-101	The Air Force Installation Security Program - All except the portions that exclusively pertain to the Protection Levels 1-3
AFI 31-201	Security Police Standards and Procedures; Chapter 1, paragraph 1.5, Installation Chief of Security Police; Chapter 2, paragraph 2.2; 2.3; 2.4; and 2.7 Chapter 3, Security Police Personnel Chapter 4, paragraph 4.5-11, 5.1 - 5.5 Chapter 6, paragraph 6.1, 6.3- 6.7 Chapter 7, paragraph 7.1.3, 7.3-7.7 Chapter 8, Search, Seizure, and Evidence Chapter 10, High Risk Situations Chapter 12, Crime Prevention Chapter 13, Lessons Learned

AFI 31-201V4	High Risk response
AFI 31-203	Security Forces Management Information System (SFMIS)
AFI 31-204	The Air Force Motor Vehicle Traffic Supervision
AFI 31-206	Security Police Investigations
AFI 31-207	Arming and Use of Force by Air Force Personnel
AFI 31-601	Industrial Security Program Management
AFI 36-2226	Combat Arms Program
	Chapter 1, paragraphs 13.3-13.8, 13.10, 13.11, 13.14, 14.1, 14.2.1, 14.2.2, 14.4, 14.6, 14.7, 14.9-14.14, 14.18-14.21, 14.26, 14.28, and 14.30
	Chapter 2, paragraphs 2.1-2.9, 2.11, and 2.13
	Chapter 3, paragraphs 3.1, 3.3, 3.4, 3.6, and 3.7
	Chapter 4, paragraphs 4.1-4.9 and 4.11
	Chapter 5, paragraphs 5.1, 5.2, 5.4.1, 5.4.3, 5.4.9, 5.4.11, 5.4.11.3, 5.4.11.4, and 5.6
	Chapter 6, paragraphs 6.1, 6.3.2, 6.3.2.1, 6.4, 6.5, and 6.6
AFI 36-2227	Volume II, Combat Arms Training and Maintenance Program Management, Chapters 1-2
T.O. 11W-1-10	Ground Weapons Inspection Data
T.O. 11W3-5-5-1	Operations, Maintenance, Repair and Replacement Parts (M16, 5.56mm,)
T.O. 11W3-3-5-4	Unit and Intermediate Direct Support Maintenance Manual (M9 Pistol)
AFMAN 31-201V7	Security Forces Administration and Reports
AFMAN 31-229	USAF Weapons Handling Manual
AEDC ISI 31-101	Installation Security Instruction
AEDC ISP 31-101	Installation Security Plan
AFOSI Manual 71-113	Firearms, Use of Force, and Apprehension Tactics
	Chapter 3, paragraph 8.1.3, Expandable Baton

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4.1.1:3.2 Guidance:

AFH 31-218	Volume I, Law Enforcement Missions and Procedures
JP 3-07.2	Joint Doctrine and Tactics for Dealing with Terrorism
Mil Hdbk 1013/A	Design Guidelines for Physical Security of Facilities
DoD 5100.76-m	Physical Security of Sensitive Conventional Arms, Ammunition and Explosives
DoD-STD-6055.9	Ammunition and Explosives Safety Standards
AFI 31-201	Security Police Standards and Procedures, (portions not listed Mandatory)
AFI 31-202	Military Working Dog Program
AFI 36-2225	Security Police Training and Standardization and

	Evaluation Program
AFI 36-2226	Combat Arms Training and Maintenance (CATM) All sections not listed as mandatory
AFMAN 31-201 V4	High Risk Response
AFMAN 31-222	Security Forces Use of Force Manual
AFMAN 36-2227 V1	Combat Arms Training Program Individual Use Weapons Program Management (as supplemented)
AFI 10-704	Military Deception Program (as supplemented)

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4.1.1:4 PRINCIPAL RELATIONSHIPS: The Contractor shall work with the AEDC population to ensure protection of people, property and information.

4.1.1:5 STANDARDS OF PERFORMANCE:

Figure 4.1.1-1 SERVICE DELIVERY SUMMARIES
Security Forces

Performance Objective	PWS Paragraph	Performance Expectation
Fully trained and qualified security force and augmentees.	4.1.1:2.1,5	100% trained and certified with all applicable security clearances and medical certifications.
Effective base-wide resource protection and anti-terrorism programs	4.1.1:2.6,7	Critical program objectives/standards are consistent with required AFIs and achieve no less than a "Satisfactory on all reviews/inspections.
Effective base-wide security, CATM and law enforcement programs.	4.1.1:2.8-11	Critical program objectives/standards are consistent with required AFIs and achieve no less than a " Satisfactory " on all reviews/inspections.
Positive access and internal circulation control.	4.1.1:2.12,13	Allow no unauthorized entries. Provide courteous, timely service to AEDC employees and visitors. Customers waited on within established time frames and no more than 3 validated complaints per evaluation period.

4.1.2 INDUSTRIAL SECURITY

4.1.2:1 SCOPE: This PWS contains the work and materials necessary to insure protection of classified information. This effort covers all industrial security administrative activities associated with a workforce of over 2500 cleared employees, and direct and indirect industrial security support for all of AEDC.

4.1.2:2 REQUIREMENTS: The Contractor shall safeguard all classified information and resources under their control. The contractor shall operate a company industrial security program in accordance with the National Industrial Security Program Operating Manual (NISPOM), local installation security requirements and:

- Designate a Facility Security Officer (FSO) with a Top Secret security clearance with the authority to enforce the Industrial Security program requirements. Ensure the following minimum Defense Security Service (DSS) FSO training:
  - "Protecting Secret and Confidential Documents" ISOO3.08
  - "Essentials of Industrial Security Management" IS002.08
  - "FSO Program Management" IS101.01 or IS101.02.
- Ensure all subcontractors enter into a Visitor Group Security Agreement (VGSA) with the Center, as determined by the Servicing Security Activity (AEDC/SDS)
- Comply with Government user security classification instructions.
- Provide security control of classified, competition-sensitive, and proprietary operations, and other sensitive unclassified information as required by the NISPOM and the installation OPSEC program.
  - Coordinate, prepare, and distribute a security plan, including control procedures, for all Center test/activities.
- Provide an overnight storage capability located on AEDC for safeguarding classified material, up to the secret level, for use by Center visitors and transitory personnel.
- Operate and maintain a classified material destruction capability for all AEDC activities.
- Provide controlled ingress and egress for classified/special access tests.
  - Devise and provide post instructions and access lists.
- Support AEDC limited access programs on a project-by-project basis, including those with very short lead times.
- Establish and maintain security instructions and controls for classified special access required programs, to include NATO and Critical Nuclear Weapons Design Information.
- Assign and account for classified storage containers, vaults, and combination padlocks under contractor control.
- Obtain Air Force Security Office approval of all controlled areas necessary for the accomplishment of contractor classified operations. Coordinate all modifications to approved controlled areas.
  - Provide test and trouble-shooting capability to ensure controlled area alarms are functional.
- Coordinate and arrange periodic AEDC Consolidated Security Council meetings, as required or when requested, to discuss various security topics within all security disciplines. Prepare, coordinate, and distribute agendas and minutes of meetings.
- Support the Air Force Security Office and Office of Special Investigations in matters dealing with criminal activity.
- Process required documentation through the DSS and OPM to obtain security clearances and credentials for Contractor personnel. Maintain records of clearance data.

- Ensure all foreign contacts are reported as required.
- Maintain a disciplinary action database regarding adverse information reporting in accordance with the DSS "Whole Person Concept".
- Process required documentation through the AEDC Air Force Security Office for background checks and interim approval for access to unclassified U.S. Government computers. This documentation is required for all new AEDC contractor personnel who do not have a U.S. security clearance or other required background investigation. Maintain records as required.
- Conduct initial and annual refresher security briefings that meet NISPOM requirements, to include operations security (OPSEC) training for all AEDC personnel. Invite all AEDC personnel.
- Perform fingerprint services for all U.S. Government employees, contractors, and user agency personnel who are visitors or tenants at AEDC.

4.1.2:3 DIRECTIVES:

4.1.2:3.1 Mandatory:

Joint Pub 3-54	Joint Doctrine For Operations Security
T.O. 00-20F-2	Inspection and Preventive Maintenance Procedures for Classified Security Containers
USSAN 1-69	United States Implementation of NATO Security Procedures
DoD 5220.22-M	National Industrial Security Program Operating Manual (NISPOM) and NISPOM Supplement and NISPOM Supplement DoD Overprint, Rev 1
DoD 5200.1R	Information Security Program, Chapters 3-7, 10, and Appendix C
DoD 5200.1-PH	DOD Guide to Marking Classified Documents
DoDD 5100.55	United States Security Authority for North Atlantic Treaty Organization Affairs
AFPD 33-2	Command, Control, Communications, and Computer (C4) Systems Security
AFI 31-406	Applying North Atlantic Treaty Organization (NATO) Protection Standards
AFI 31-601	Industrial Security Program Management (as supplemented)
AFI 71-101	Criminal Investigations (Vol 1), Counterintelligence (Vol 4), and Protective Service Matters (Vol 2), Suspicious Contact Reporting Requirements (Vol 3)
AFI 10-1101	Operations Security (OPSEC) (as supplemented)
AEDC Plan 10-1101	Operations Security

4.1.2:3.2 Guidance:

Executive Order 12958, As Amended

Executive Order 13292 Further Amendment to Executive Order 12958, As Amended, Classified National Security Information

DoD 5230.24	Distribution Statements on Technical Documents
DoD 5230.25	Withholding of Unclassified Technical Data from Public Disclosure
DCID 1/7	Security Controls on the Dissemination of Intelligence Information
DoD 5400.7-R	DoD Freedom of Information Act Program

ISOO Implementing Directive No 1, "Classified National Security Information"

JFAN 6-9	Physical Security Standards for Special Access Facilities
AFI 31-401	Managing the Information Security Program, as supplemented
AFI 37-131	Freedom of Information Act Program
AFI 71-101	Special Investigations
AFI 10-704	Military Deception Program (as supplemented)
AFI 61-205	Sponsoring or Co-Sponsoring, Conducting, and Presenting DoD-Related Scientific Papers at Unclassified and Classified Conferences, Symposia, and Other Similar Meetings

4.1.2:4 PRINCIPAL RELATIONSHIPS: The Contractor shall work closely with all AEDC functions.

4.1.2:5 STANDARDS OF PERFORMANCE:

Figure 4.1.2-1 SERVICE DELIVERY SUMMARY
Industrial Security

Performance Objective	**PWS Paragraph**	**Performance Expectation**
An effective Industrial Security Program.	4.1.2:2	Security Program rated at least "Satisfactory" on security reviews. No classified information compromises. Zero test delays resulting from ineffective security. Clearances and background checks processed in a timely manner

4.1.3 PASS AND REGISTRATION / IDENTIFICATION

4.3.1:1 SCOPE: This PWS element includes all work necessary to operate a pass and identification section.

4.3.1:2 REQUIREMENTS: The Contractor shall operate a pass and identification section to provide services including military identification card issuance, vehicle registration, and classified/unclassified visitor control functions consistent with policy and procedures outlined in the mandatory directives, local center instructions and supplements.

- Pass and registration shall be open from 6:30 a.m. to 3:30 p.m., Monday – Friday, except holidays. Military credentials shall be issued from 7:00 a.m. to 3:30 p.m.
- Issue identification credentials to active duty, guard, reserve, and retired members and their dependents from all service branches; 100% DAV and dependents; DoD and NAF civilians, and DoD contractors.
- Process personnel identification transactions in accordance with AFI 36-3026 and DODI 1000.13, as well as any future programs/functions that may become a part of DEERS/RAPIDS.
- Review appropriate documentation to verify identity and eligibility for identification card requests through DEERS inquiry and preparation of DD Form 1172, Application for Uniformed Services Identification Card DEERS Enrollment.
- Process DEERS enrollment of eligible family members and issue identification cards as applicable.
- Issue and retrieve Common Access Cards or machine-readable teslin cards as applicable. Prepare and distribute the DD Forms 2841 and 2842, reestablish PIN on CAC when locked or forgotten and prepare and distribute CAC "return forms" as required.
- Provide assistance and guidance for applications for dependency determinations for eligible identification card applicants, for former spouses seeking benefits under the Uniformed Services Spouses' protection Act; and for former spouses and windows, seeking reimbursement of identification card benefits.
- Appoint a site security manager responsible for activating all RAPIDS users and assigning roles for new and existing users; maintain and update local control of system security by adding and assigning Verifying Official (VO) and Super Verifying Official (SVO) roles to users; manage ID card stock and consumables, maintain necessary records for audit IAW RAPIDS/VO CPS; and function as a VO.
- Control and account for blank ID card and CAC cardstock, returned and error-in process CACs, laminate not in use, and completed DD Forms 1172,1172-2, 2841, 2842. Manually prepared ID cards and Geneva Convention Cards must be kept under lock and key when office is closed.
- Retrieve all identification media upon termination of employment, retirement, separation from service, revocation of privileges, or other appropriate event.
- Appoint an appropriately trained records manager in writing

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4.1.3:3 DIRECTIVES:

4.1.3:3.1 Mandatory:

DODI 1000.1 Identity Cards Required By the Geneva Conventions

DODI 1000.13	Identification Cards for Members of the Uniformed Services, Their Dependents, and Other Eligible Individuals
DODD 1341.1	Defense Enrollment Eligibility Reporting System
DODI 1341.2	Defense Enrollment Eligibility Reporting System Procedures
AFI 36-3026	Identification Cards For Members Of The Uniformed Services, Their Family Members, And Other Eligible Personnel
RAPIDS Trng Manual	Department of Defense (DOD) Real-time Automated Personnel Identification System (RAPIDS) Workstation and Verifying Official (VO) Certification Practice Statement (CPS)

4.1.3:4 STANDARDS OF PERFORMANCE:

Figure 4.1.3-1 SERVICE DELIVERY SUMMARY
Pass and Registration / Identification

Performance Objective	PWS Paragraph	Performance Expectation
Process ID Card Requests	4.1.1:2.13	92% completed the same day with all required information, eligibility and actions verified IAW applicable law/instruction
Retrieve and revoke the ID card upon separation or retirement from service; ID cards that are not retrieved in person shall be requested by return receipt letter with a 30 day suspense for return of the identification card.	4.1.1:2.13	92% completed the same day with all required information, eligibility and actions verified IAW applicable law/instruction; 90% of letters to unauthorized cardholders completed with 5 work days
Retrieve ID cards from dependents whose privileges have been revoked or are no longer eligible; ID cards that are not retrieved in person shall be requested by return receipt letter with a 30 day suspense for return of the identification card.	4.1.1:2.13	92% completed the same day with all required information, eligibility and actions verified IAW applicable law/instruction; 90% of letters to unauthorized cardholders completed with 5 work days

4.2 ENVIRONMENTAL, SAFETY, AND QUALITY

4.2.1 ENVIRONMENTAL MANAGEMENT

4.2.1:1 SCOPE: This PWS element includes all work necessary to plan and implement a comprehensive Environmental Management Program.

4.2.1:2 REQUIREMENTS: The Contractor shall formulate, document, maintain, and execute the AEDC Environmental Management Program encompassing all aspects of environmental compliance, pollution prevention, restoration, natural and cultural resource conservation, and forestry. (OT-2003-30180) (OT-2003-30181)

4.2.1:2.1 Formulate, document, implement, and maintain a comprehensive Environmental Compliance Program to ensure compliance with applicable federal, state, and local environmental laws, regulations, and standards; permits; executive orders; DoD directives; and Air Force Instructions and policies for the elimination, prevention, and control of pollution.

4.2.1:2.1.1 Develop and implement processes to minimize the likelihood that any substance is released to the environment in a concentration or total amount that exceeds established standards or permit requirements. The most stringent standard set by any of the governing regulatory agencies shall be used if more than one agency has established standards for a particular substance.

4.2.1:2.1.2 Identify and evaluate environmental pollution sources and continuously monitor the effectiveness of pollution prevention and abatement efforts to ensure that pollutants do not exceed permit limits.

4.2.1:2.1.3 Maintain and comply with the Arnold AFB One Plan, including annexed plans, for spill response. (OT-2003-30116)

- Immediately report to the Government all chemical, oil, toxic, or other hazardous material spills in accordance with the AEDC Spill Prevention and Response Plan and take action to mitigate the release.
  - Advise the Government when regulatory notification requirements are triggered as a result of a spill.
  - Evaluate spill responses, investigate spill causes, and define corrective actions.
  - Maintain and update the AEDC spills database. (OT-2003-30117)

4.2.1:2.1.4 Evaluate all Center activities to assess compliance with relevant regulations promulgated by the Environmental Protection Agency and/or the Tennessee Department of Environment and Conservation.

4.2.1:2.1.5 Participate in and support external Air Force Environmental Compliance Assessment and Management Program (ECAMP) audits of AEDC. Conduct internal ECAMP and other environmental audits as directed. Initiate action to correct areas not in compliance. Develop and update the ECAMP Management Action Plan. (OT-2003-30118) (see AFI 32-7045)

4.2.1:2.1.6 Support federal, state, and local regulators:

- Conduct environmental inspections and initiate corrective actions.
- Review and recommend correction of web-based public environmental compliance databases containing AEDC environmental information.

- Conduct surveys and studies and provide information in support of environmental permit reporting or other compliance requirements. (OT-2003-30037)
- Prepare requests for environmental permits, permit renewals, or permit modifications as required. (OT-2003-30158)

4.2.1:2.1.7 Provide support in responding to AFMC, USAF, and regulatory agency data calls such as the annual EPA Federal Facilities Compliance Report, the Internet System DUSD (I&E) data call, DLA/DFSC Fuels projects data call, AFMC Business Process Indicators, and other various Air Force and regulatory agency data calls.

4.2.1:2.1.8 Maintain current AEDC information in the Air Program Information Management System (APIMS) and successor systems. (OT-2003-30040)

4.2.1:2.1.9 Certify reports, plans, data, evaluations, or other information required by this section as to their accuracy and completeness.

4.2.1:2.1.10 Support the planning, development, implementation, and maintenance of an Air Force Environmental Management System (EMS) in accordance with established HQ USAF and AFMC Implementation Guidance, Policy, and Schedule.

4.2.1:2.2 Develop and execute a Hazardous Waste Management Program. (see AFI 32-7042)

- Manage the accumulation, storage, transport, and disposal of hazardous waste and hazardous materials generated on AEDC.
- Develop, maintain, document, and conduct a hazardous material and hazardous waste training program for appropriate employees.
- Update the AEDC Hazardous Waste Management Plan. (OT-2003-30041)

4.2.1:2.3 Formulate, document, implement, and maintain a comprehensive Compliance Through Pollution Prevention (CTP2) Program in accordance with AFI 32-7080.

- Maintain and update AEDC's Compliance Assurance and Pollution Prevention Management Action Plan (CAPP). (OT-2003-30042)
- Conduct studies, including opportunity assessments, to eliminate or reduce environmental pollutants resulting from AEDC operations.
  - Implement and maintain pollution prevention controls to reduce or eliminate pollution sources at the point of generation.
  - Consider potential pollution control problems and pollution prevention opportunities when selecting or approving chemicals or materials to be used in operations.
  - Include pollution prevention as an element for consideration in facility modification, new facility development, or any other potential pollution generating process or project.
- Develop, operate, and maintain safeguards, such as dikes, containment areas, relief vessels, or other appropriate measures, to prevent pollution from accidental discharge of fuels, solvents, oils or other chemicals.
- Develop and maintain a comprehensive non-point source pollution control program.
- Provide technical support to the Hazardous Materials Dispensing Facility (PWS 4.5.1) regarding issue and use of hazardous materials and identification of less toxic substitutes to reduce hazardous material usage and hazardous waste generation. (OT-2003-30157)
- Maintain and update information in the Hazardous Materials Management System (HMMS). (OT-2003-30043)
- Provide technical assistance and support to the Recycling Operations Center.

- Support the Public Affairs function (PWS 6.1:2.8) in the execution of a Center Environmental Awareness Program.

4.2.1:2.4 Support the continuing effort to eliminate the use of ozone depleting chemicals (ODC).

- Conduct quarterly ODC inventory. Input the data into the HMMS.
- Identify and recommend suitable ODC substitutes.
- Review ODC use rates, identify needs, initiate action to replenish stocks or transfer excess material to the ODC repository.
- Review the AEDC Ozone Depleting Substance Management Plan annually and update as required. (OT-2003-30044)
- Certify refrigeration equipment and personnel in accordance with applicable EPA or state regulations. Maintain records of certifications.

4.2.1:2.5 Develop, document, and execute an AEDC Installation Restoration Program (IRP) compliant with IRP policies, permits, and environmental regulations.

- Support development and semi-annual review of the Facility Action Plan.
- Support development of the Installation Restoration out-year program.
- Develop, maintain, and implement the Installation Land Use Control Management Plan. Coordinate development, execution, and documentation of site-specific implementation plans with appropriate installation support offices. (OT-2003-30046)
- Maintain installation-wide Standard Operating Procedures and Quality Assurance Manuals for all IRP activities. (OT-2003-30047)
- Operate and maintain implemented remedial response actions to include hydraulic containment systems, landfill gas systems, caps, or other land use controls, in accordance with documented operating procedures. (OT-2003-30048)
- Document required site operation and maintenance activities. Evaluate and document remedial response action efficiency and effectiveness in achieving design objectives on an annual basis. (OT-2003-30159)
- Provide support to the restoration program and Air Force restoration program contractors for investigations and remedial actions. Plan and conduct IRP site investigation activities as directed.
- Maintain and update the installation environmental restoration data management system as required. (OT-2003-30050)

4.2.1:2.6 Develop, conduct, and maintain a comprehensive integrated ecosystem management program for the conservation and management of natural and cultural resources, including forest, fish and wildlife, wetlands, and threatened and endangered species. (see AFI 32-7064)

4.2.1:2.6.1 Maintain and execute an Integrated Natural Resources Management Plan and associated component plans as defined in AFI 32-7064. Assist the Government in engaging applicable state and federal agency, private organization, university, and conservation organization stakeholders in the ecosystem management process. (OT-2003-30051)

4.2.1:2.6.2 Develop and execute a comprehensive Fish and Wildlife Management Program in coordination with the Tennessee Wildlife Resources Agency (TWRA). Include management and improvement of habitat for indigenous wildlife; development and implementation of annual hunting and fishing programs; development and implementation of a wildlife food plot program, to include the agricultural out-lease program; and the collection of fees associated with the hunting program.

4.2.1:2.6.3 Develop and execute a comprehensive Forest Management Program. Manage forestlands using multiple-use sustained-yield concepts to produce an optimum level of quality wood fiber and related forest products while maintaining a suitable habitat for indigenous wildlife. Develop, implement, and maintain a continuous forest inventory system; an annual forest product sale program to include all forest products; an annual controlled burning program; a forest regeneration program; a timber access road improvement program; a timber-stand improvement program; and a forest protection program. The net area under forest management at Arnold AFB is 29,287 acres – hardwood at 23,492 acres; pine at 5,795 acres.

4.2.1:2.6.4 Implement a comprehensive rare, threatened, and endangered species management program to include identifying flora and fauna species, and developing management objectives for the protection of these species.

4.2.1:2.6.5 Plan and execute a Cultural Resources Management Program, (see AFI 32-7065).

- Promote public awareness.
- Support consultation with the State Historic Preservation Office, other authorities and interested parties.
- Provide local guidelines for compliance with applicable laws and regulations.
- Maintain a Cultural Resources Management Plan. (OT-2003-30053)

4.2.1:2.7 Develop, maintain, and update geographic information to provide computer-aided mapping and database management for the various environmental programs, environmental media areas, and natural and cultural resources, including forests, wetlands, soils, plant and wildlife habitats, threatened and endangered species, and natural areas.

4.2.1:2.8 Maintain and execute an Environmental Impact Analysis Program (EIAP). Evaluate environmental impact on all actions (work orders, projects, tests, plans, etc.) that have the potential for causing environmental impacts. Designate a focal point for coordinating the program. Review and coordinate all assessments and evaluations with the Air Force. (see AFI 32-7061) (OT-2003-30054)

4.2.1:2.9 Provide technical review, when requested, of technical reports, studies, memoranda, plans, and designs prepared by outside agencies or contractors and provide detailed, written comments and recommendations where applicable. (OT-2003-30049)

4.2.1:2.10 Prepare planning and programming documentation for environmental compliance, pollution prevention, natural and cultural resource conservation, forestry, and installation restoration efforts

- Identify and forecast environmental requirements covering the period of the FYDP across all environmental media programs and input, update, and maintain these requirements in the Automated Civil Engineer System – Project Management, the HQ AFMC Environmental Quality (EQ) Database, and successor databases, as appropriate. (OT-2003-30119)
- Prepare engineering evaluations to justify proposed environmental infrastructure projects identified to correct environmental non-compliance.
- Develop annual environmental design and execution programs.
- Enter all work requirements in a computerized maintenance management system.
- Coordinate execution of assigned environmental projects with PWS 4.3.1.

4.2.1:3 DIRECTIVES:

4.2.1:3.1 Mandatory: None

4.2.1:3.2 Guidance:

40 CFR 112	Oil Pollution Prevention
AFPD 32-70	Environmental Quality
AFI 32-1052	Facility Asbestos Management
AFI 32-4002	Hazardous Material Emergency Planning and Response
AFMAN 32-4013	Hazardous Material Emergency Planning and Response Guide
AFI 32-7001	Environmental Budgeting
AFI 32-7005	Environmental Protection Committees
AFI 32-7020	The Environmental Restoration Program
AFI 32-7040	Air Quality Compliance
AFI 32-7041	Water Quality Compliance
AFI 32-7042	Solid and Hazardous Waste Compliance (incl AFMC Sup 1)
AFPAM 32-7043	Hazardous Waste Management Guide
AFI-32-7044	Storage Tank Compliance
AFI 32-7045	Environmental Compliance Assessment and Management Program (ECAMP)
AFI 32-7047	Compliance Tracking and Reporting
AFI 32-7061	The Environmental Impact Analysis Process
AFI 32-7064	Integrated Natural Resources Management
AFI 32-7065	Cultural Resources Management
AFI 32-7066	Environmental Baseline Surveys in Real Estate Transactions
AFI 32-7080	Pollution Prevention Program
AFI 32-7086	Hazardous Materials Management, 1 Nov 04

HQ AFMC Policy: Environmental Quality (EQ)/Real Property Maintenance (RPM) Funding Eligibility Guidance for Non-Recurring Infrastructure Projects
Air Force Material Command Standardized Environmental Compliance and Conservation Programming Guidance, Latest Edition
HQ AFMC Environmental Quality Programming Matrices, Latest Edition
HQ AFMC Pollution Prevention Program Guidance, Latest Edition

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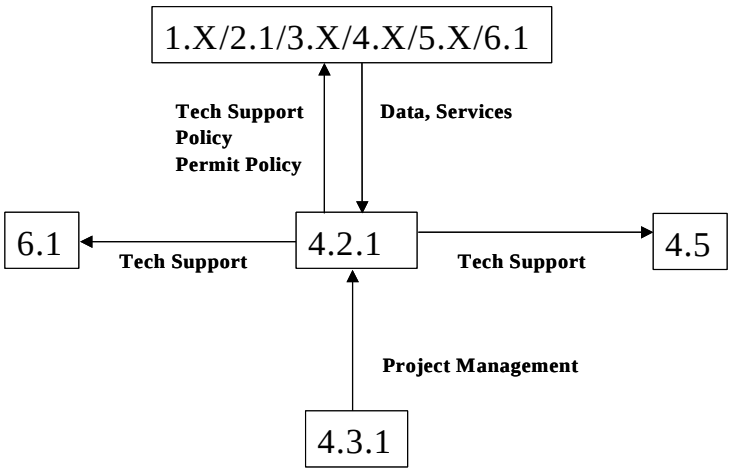
4.2.1:4 PRINCIPAL RELATIONSHIPS: Accomplishment of the AEDC Environmental Management Program entails efforts throughout the Contractor's organization. The Contractor shall coordinate the administration of environmental management across the contract and across AEDC. Interaction with other contractor(s) on AEDC is required to enhance the implementation of the AEDC Environmental Management Program. The sale of all forest products will be administered by PWS 4.5.1.



4.2.1:5 STANDARDS OF PERFORMANCE:

Figure 4.2.1-1 SERVICE DELIVERY SUMMARY
Environmental Management

Performance Objective	PWS Paragraph	Performance Expectation
Effective Environmental Compliance Program.	4.2.1:2.1	Compliance with regulatory requirements. Zero regulator citations. Minimize spills and their impacts.
Timely environmental audits and inspections.	4.2.1:2.1.4-6	Audits and inspections conducted and findings addressed by agreed upon dates 95% of the time.
Timely, accurate regulatory reports and permit requests.	4.2.1:2.1.6	Suspense dates met with no omission of pertinent data. All permits current and accurate.
Timely, accurate response to data calls.	4.2.1:2.1.7	Suspense dates met 95% of the time with no omission of pertinent data.
Effective Hazardous Waste Management Program.	4.2.1:2.2	Zero regulator Notices of Violation. Operations comply with hazardous waste permit and management directives. Hazardous Waste Management Plan current.
Effective Compliance Through Pollution Prevention Program.	4.2.1:2.3	Assessment of 10% of compliance sites annually for pollution prevention opportunities. Hazardous Material Management System is current and accurate with no omission.
Effective Installation Restoration Program.	4.2.1:2.5	Zero regulator Notices of Violation. IRP complies with regulator-directed timetable. Site operations comply with documented procedures.
Comprehensive and well-coordinated Integrated Natural Resources Management Plan.	4.2.1:2.6.1	Plan addresses all critical aspects of natural resources. Stakeholder concerns addressed. Resources programmed to effect plan execution.
Effective Forest Management Program.	4.2.1:2.6.3	Compliance with approved Forest Management Plan with no major exception. Timber sales receipts process results in timely payments to the Air Force and adheres to auditable principles.

Performance Objective	PWS Paragraph	Performance Expectation
Effective Rare, Threatened, and Endangered Species Management Program.	4.2.1:2.6.4	Compliance with regulatory requirements. Zero regulator citations.
Effective Cultural Resources Management Program.	4.2.1:2.6.5	No adverse mission impact. Cultural Resource Management Plan is current. No regulator Notices of Violation.
Reliable environmental geographical information.	4.2.1:2.7	Geographical information is current, accurate, and available upon request 95% of the time.
Compliant, responsive EIAP Program.	4.2.1:2.8	Program compliance with NEPA. Impact analyses (EA, EIS, EBS, AF 813) completed by agreed upon date resulting in no support or test project delay.
Valid, comprehensive annual and long-range Environmental planning and programming documentation.	4.2.1:2.10	Documentation meets suspenses and accurately reflects Center needs and priorities 95% of the time.

4.2.2 SAFETY

4.2.2:1 SCOPE: This PWS element contains all the work necessary to provide a safe working environment throughout all AEDC functions and workplaces.

4.2.2:2 REQUIREMENTS: The Contractor shall plan and execute a safety program to prevent injuries, environmental incidents, and facility and equipment damage. The program shall include Ground Safety, Systems Safety, and Explosive Safety in accordance with applicable Federal, State, Air Force, and AEDC standards, rules, and regulations. (OT-2003-30180) (OT-2003-30163)

4.2.2:2.1 Conduct annual, high-interest, and random safety inspections of all facilities and operations on all work shifts. Annual inspections will include evaluation of Safety Program Management elements. (DI-MGMT-80257)

- Inspect explosive storage, handling, and operating facilities monthly.
- Conduct high interest inspections in areas that require extra surveillance at least semi-annually. For example, area's that experience high numbers of serious deficiencies during safety inspections, high mishaps rates, special high risk projects, etc.
- Conduct random (spot) safety inspections by qualified safety professionals in areas of emphasis, conduct 200 inspections annually.
- Document discrepancies and the status and corrective action of identified occupational safety and fire hazards or deficiencies in accordance with AFI 91-301.
- Implement and maintain an effective hazard reporting system. Assure prompt identification of hazards and timely corrective action.

4.2.2:2.2 Investigate and document safety mishaps involving personnel or equipment. (DI-SAFT-81563)

- Identify and report all causal factors, and formulate and implement positive preventive action. The Government may choose to investigate any safety mishap or participate in the Contractor's investigation.
- Measure and record injury statistics. Conduct accident trend analysis and recommend corrective action to reduce the number and severity of incidents.
- Conduct a safety awareness and mishap prevention program for "on and off the job" activities.

4.2.2:2.3 Support Center operations. (DI-SAFT-80101B)

- Conduct Operational Risk Management (ORM) safety hazard analyses identifying the level of risk involved for all projects; test, investment, and support; and for explosives and propellant handling, storage, and use.
- Maintain an accurate baseline safety hazard analysis for each asset.
- Review all facility and operational configuration changes.
- Identify system safety life cycle phases and apply system safety principles, tools, and techniques from the conceptual phase to the disposal phase.
- Review and evaluate system safety studies performed by others when directed by the Government.
- Conduct ORM job safety analyses for applicable day-to-day operations.

4.2.2:2.4 Identify, document, and execute explosive safety and disposal, missile safety, and nuclear safety requirements.

- Develop and review explosive site plans in accordance with AFMAN 91-201 and DOD 6055.9-STD. (OT-2003-30058)
  - Prepare and review waivers, deviations, and exemptions. (DI-SAFT-80104B)
  - Maintain current and accurate site plans, waivers, deviations, and exemptions.
- Ensure that all workers performing duties inside explosive clear zones are briefed on explosive hazards, general explosive safety, and procedures in the event of a mishap.
- Ensure at least one member of the contractor's staff completes the USAF Weapons Safety Officer Course or equivalent.
- Review and maintain Center Operating Instructions (COI) governing explosives.

4.2.2:2.5 Maintain a safety program for AEDC recreational areas and activities. Conduct pre- and post-seasonal inspections of all recreational areas.

4.2.2:2.6 Support the AEDC Commander's Consolidated Safety and Health Council. Ensure that senior contractor management officials brief their respective mishap experience and explain actions taken as a result of safety inspections.

4.2.2:2.7 Conduct formal safety training for all employees once a year. Conduct a Supervisor Safety Training Course for all first line supervisors to ensure their complete understanding of AEDC Safety Standards and accident prevention responsibilities. Ensure all required training is accomplished and required documentation is maintained. At least one member of the contractor's staff shall be a Certified Safety Professional or equivalent.

4.2.2:2.8 Prepare safety-related publications and bulletins.

- Maintain and update AEDC Safety, Health, and Environmental Standards. (OT-2003-30059)
- Participate in and support Safety Week activities.

4.2.2:3 DIRECTIVES:

4.2.2:3.1 Mandatory:

AFPD 91-2	Safety Programs
AFPD 91-3	Occupational Safety & Health
AFI 91-202	The US Air Force Mishap Prevention Program
AFI 91-204	Investigating and Reporting US Air Force Mishaps
AFI 91-207	The USAF Traffic Safety Program
AFI 91-301	Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program
AFMAN 91-201	Explosive Safety Standards
DoD 6055.9-STD	DOD Ammunition and Explosives Safety Standards

4.2.2:3.2 Guidance:

AFOSH STDs	Air Force Occupational Safety and Health (AFOSH) Standards
AFM 91-224	Ground Safety Investigation and Reports
MIL-STD-882D	System Safety Program Requirements

4.2.2:4 PRINCIPAL RELATIONSHIPS: The contractor shall cooperate and work jointly with the Air Force Safety Office on safety programs and issues. Contractor safety program shall

interface with all contractor and Government operational and staff offices, and shall share available training courses and course materials with other Center contractors and Air Force Safety.

4.2.2:5 STANDARDS OF PERFORMANCE:

Figure 4.2.2-1 SERVICE DELIVERY SUMMARY
Safety

Performance Objective	PWS Paragraph	Performance Expectation
Effective ground, systems, and explosive safety program.	4.2.2:2	Safety incident rates for personnel injuries, as expressed by Air Force Mishap Classes A, B, C, and D, shall meet the following: • Zero Class A and B incidents • Class C incident rate does not exceed 1.0 per 200,000 man-hours and reflects a declining trend • Class D incident rate does not exceed 2.0 per 200,000 man-hours and reflects a declining trend Zero Air Force Mishap Class A, B, and C property damage incidents.
Timely, thorough ground and explosives safety inspections.	4.2.2:2.1	95% of inspections are conducted and results are documented in accordance with established schedules. All key operational components included.
Thorough investigations and mishap, hazard, and injury reporting.	4.2.2:2.2	95% of all investigations are completed and reports are submitted by established suspense date. Investigations omit no pertinent data.
Comprehensive and accurate system safety analyses.	4.2.2:2.3	No test effort is negatively impacted by the ineffective execution of the systems safety process.
Effective explosives planning, mishap prevention, and hazard abatement.	4.2.2:2.4	Zero explosives incidents; no mission/test effort is negatively impacted as a result of explosives planning, mishap prevention, or hazard abatement requirements.

Timely, complete, and accurate explosives operating instructions, site plans, waivers, deviations, exemptions, and facility license applications.	4.2.2:2.4	All site plans, waivers, deviations, exemptions, and licenses are current. Site plan, waiver, deviation, exemption, and facility license applications are prepared by established suspense dates.
Comprehensive and timely safety training.	4.2.2:2.7	Required training (AEDC Safety Standard A1, OSHA, Air Force Explosives Safety requirements, and other applicable areas) is accomplished annually for 100% of affected personnel.

4.2.3 QUALITY

4.2.3:1 SCOPE: This PWS element focuses on ensuring consistent, quality delivery of AEDC products and services and includes all work necessary to provide an ISO-certified Quality Program.

4.2.3:2 REQUIREMENTS: The contractor shall develop, apply, and maintain a quality program certified in accordance with the requirements of ANSI/ISO/ASQ Q9001-2000, Quality Management Systems - Requirements, as tailored by the Contractor and acceptable to the Government. The Quality Program shall be applied to applicable contractor activities as delineated in the Quality Program Plan. (OT-2003-30121) (OT-2003-30181)

- Comply with the requirements of ANSI/ISO/ASQ Q9001-2000 and achieve program certification by 1 January 2005.
- Conduct inspections and first-party audits in accordance with the approved Quality Program to document and verify that all work processes, products, and services conform to and comply with established procedures and standards. Quality program personnel who are functionally independent of the work processes or products under review shall perform inspections and audits.
- Control nonconforming products and purchases and provide corrective action in accordance with program procedures. The program shall include a documented material review process and provide cost effective disposition of the non-conforming products by rework, repair, return to vendor, use-as-is, or scrap.
  - Establish and maintain a database of all non-conformances, corrective actions, preventive actions and root cause analyses applied, and the costs associated with preventing, detecting, and correcting all non-conformances.
  - Determine trends of nonconformance, effectiveness of corrective action, and cost of quality, and use such to improve the program.
  - Use Technical Order 00-35D-54 to assess deficiencies and take timely, appropriate actions. (OT-2003-30122)
- Provide precision inspection services to support machining and fabrication, testing, operations, maintenance, and procurement/purchasing.
- Implement and maintain a supplier rating system. The system must incorporate existing historical data.

4.2.3:3 DIRECTIVES:

4.2.3:3.1 Mandatory:

ANSI/ISO/ASQ Q9001-2000	Quality Management Systems –Requirements
T.O. 00-35D-54	USAF Deficiency Reporting and Investigation System

4.2.3:3.2 Guidance:

ISO 9000/2000	Quality Management System – Fundamentals
ISO 9004	QMS – Guidelines for Performance Improvement
ISO 10006	QMS – Guidelines for Project Management
ISO 10007	QMS – Guidelines for Configuration Management
AFPD 63-5	Quality Assurance

4.2.3:4 PRINCIPAL RELATIONSHIPS: The Quality Program requires interaction with all other contractor functions to implement the program and to address and resolve mutual quality issues in such areas as material control, instrumentation, inspection, manufacturing, acquisition, supply, and construction.

4.2.3:5 STANDARDS OF PERFORMANCE:

Figure 4.2.3-1 SERVICE DELIVERY SUMMARY
Quality

Performance Objective	PWS Paragraph	Performance Expectation
Effective Quality Program.	4.2.3:2	Quality Program Plan and its implementation satisfactorily addresses all applicable AEDC functions and operations. ISO 9000 Program certification is maintained. Program performance is 95% compliant.
Effective precision inspection services.	4.2.3:2	No negative impact to test or support project occurs as a result of precision inspection service support.
An effective supplier rating system.	4.2.3:2	Supplier products and services meet established quality requirements 97% of the time. Non-conforming material and supplier/subcontractor is identified, correction action is initiated within 2 working days of material receipt, and is actively pursued until acceptable resolution is achieved.

4.3 CIVIL ENGINEERING

4.3.1 BASE SUPPORT ASSETS

4.3.1:1 SCOPE: This PWS element includes the work and material to maintain, repair, improve, modernize, and acquire AEDC base support assets as identified in Appendix 4.3.1-1, and other assets. Work includes efforts funded by the Military Construction (MILCON) Program, Military Family Housing Funds, Non-appropriated Funds, Defense Logistics Agency, and Appropriations 3400 and 3600. The approximate annual workload includes:

- Maintenance of real property records for 325 buildings, 700 facilities, and a Base area of 40,000 acres.
- Maintenance of 400,000 file drawings and process their changes.
- Development and processing of 25 site plans and 30 real property reports.
- Updating the General Plan.
- Maintenance of complete utilization and status documentation for all facilities.
- Development of 60 data inputs for reports to higher HQs.
- Activity-level maintenance and repair (less than $50,000 M&R and $15,000 Minor Construction (MC)).
- Initiation and execution of 10,000 work requests valued at $8,000,000.
- Operation and maintenance of the Base Civil Engineering shops.
- Project-level maintenance, repair, modernization, improvement, and acquisition of base support and utility assets (greater than $50,000 M&R and $15,000 MC)
- Execution of 100 M&R projects valued at $8,000,000.
- Support to 4 multi-year MILCON projects.

4.3.1:2 REQUIREMENTS: The contractor shall develop and execute a Base Support Asset Program that covers the period of the Future Year Defense Plan (FYDP). Detailed program planning is required for the execution FY. (OT-2003-30127) (OT-2003-30088).

4.3.1:2.1 Develop the plan and program the requirements with inputs from PWS 2.1, 3.1, 3.2, 4.2, 4.3, 4.4, 5.1, and 6.1.

- Identify, plan, and program all work required to meet existing and projected maintenance needs.
- Develop and maintain a current list of Base Support Asset Backlog Maintenance and Repair (BMAR) requirements.
- Enter all work and document associated cost, schedule (with milestones), performance objectives, and deliverables in a computerized maintenance management system.
- Maintain separate funding source identity.
- Prepare program requirements and data for the installation, modification, or relocation of support assets.
- Develop and maintain an acquisition plan for MILCON and test facility acquisitions. (OT-2003-30061)
- Prepare and submit for approval DD Forms 1391/1391c (Military Construction Project Data), certificates, parametric cost estimates, and supporting data before the design of any repair project with an estimated total cost greater than $5,000,000; construction projects exceeding $750,000; NAF projects; Defense Logistics Agency-funded projects; and Military Family Housing projects. (OT-2003-30062)
- Develop a detailed cost estimate supporting each MILCON project.

- Assess, document, and communicate potential environmental impacts in accordance with environmental management guidelines.
- Plan and define technical and functional requirements and cost information required to advocate support and test facility acquisitions. (OT-2003-30063)
- Develop a Requirements and Analysis Management Plan (RAMP) in accordance with the USAF PM Guide. (OT-2003-30064)
- Plan and program all work in consonance with PWS 2.1.

4.3.1:2.2 Schedule all base support asset work through the AEDC Consolidated Scheduling Process.

4.3.1:2.3 Maintain and repair base support assets. Record the status of maintenance activities.

- Operate a 24-hour, seven-days-a-week, maintenance service call telephone number to receive maintenance requirements.
- Perform periodic surveys and inspections, and identify and record maintenance, repair, and construction requirements. Assign Infrastructure Condition Index (ICI) ratings to all assets. Assimilate and provide infrastructure system/facility condition by type of asset.
- Record all maintenance activities and requirements in a computerized maintenance management system (CMMS).
  - Classify all the work in accordance with AFIs 32-1021 and 32-1032.
  - Categorize as activity or project-level work (see 4.3.1:2.4).
- Perform activity-level maintenance and repair.
  - Coordinate prioritization (based on criticality) and scheduling with customers.
  - Assure valid activity work requirements and completion dates.
  - Assure completed requirements are correctly coded and updated.

4.3.1:2.4 Execute the annual projects workload (design, construction, operational checkout). Apply a comprehensive systems engineering process in consonance with the guidance of PWS 2.1.

- Manage projects to meet cost, schedule, and performance goals. (OT-2003-30007)
- Apply Earned Value Management (EVM) as directed by the Government.
- Use and maintain the ACES Project Management (PM) module. Prepare project listings and automated work requirement reports as required by the Government.
- Prepare technical data packages in accordance with AEDC-ENGR-STDs T-1, T-2, T-3, T-4 and T-5. (OT-2003-30101)
- Support the planning and programming of civil engineering activities support for the Military Construction (per AFI 32-1021) and Test Facility Construction (per AFI 65-601) programs. This includes:
  - Program requirements and data for the installation, modification, or relocation of test support equipment using RDT&E funds.
  - Information and supporting data for the preparation of DD Forms 1391/1391c.
  - Systems analysis necessary to prepare and defend the Requirements and Analysis Management Plan (RAMP).
- Execute M&R, Non-Appropriated Fund, Military Family Housing, and Self-Help jobs. Maintain current program documentation. (OT-2003-30070)
  - Review and analyze the functional adequacy of facility designs developed by others. Provide comments, documentation of analysis, and recommendations on GC Form 1626, Design Review Comments (OT-2003-30075)

  - Develop and coordinate project changes with the Government. (OT-2003-30006)
  - Inspect construction execution projects daily, document observations in AF Form 1477, and maintain an appropriate photographic record. (OT-2003-30016)
- Upon project completion, submit final (as-built) drawings (tiff format) and associated documentation to Real Property records, along with the Project Completion Notice, AEDC Form 850G. (OT-2003-30017) (OT-2003-30077)
- Assist the Government in the release of project documentation. Use AEDC Form 809 to coordinate document release with the Government Program Manager, the BCE, and release/distribution-approving authorities. (OT-2003-30011)
- Execute MILCON projects and Test Facility Construction projects. In addition to the above requirements:
  - Execute each project in accordance with the approved and agreed-upon baseline plan. Negotiate changes by agreed upon procedures before execution.
  - Develop and execute a System Engineering Management Plan for facility acquisition projects in accordance with the program requirements document. (DI-MGMT-81024)
  - Provide technical and management support in execution of projects for other Government agencies. Assure effective integration and continuity of all multi-year efforts.
  - Comply with applicable safety provisions and procedures during project execution and checkout operations.

4.3.1:2.5 Plan and execute a Preventive Maintenance Program consistent with PWS 3.1.

4.3.1:2.6 Plan and execute a corrosion control program for all AEDC assets.
- Assess condition of facilities and systems and identify requirements.
- Perform associated repair work as needed.

4.3.1:2.7 Plan and execute an annual roof inspection and repair program.
- Assess condition of roofs and identify maintenance and repair requirements.
- Maintain records (database) of each building roof to include: design drawings, type of roof system, inspections, infrared surveys, digital images, maintenance scheduled/performed, costs, and results of studies and surveys.
- Perform emergency roof repair work.

4.3.1:2.8 Maintain and repair railroad tracks and associated equipment.
- Annually clear right-of-way to include 50 feet either side of the railroad tracks, subject to environmental constraints and provisions.
- Maintain the Propulsion Wind Tunnel special duty tracks.

4.3.1:2.9 Maintain and repair Arnold Village Military Family Housing (MFH) to include facilities, structures, surfaced areas, fire alarm and protection systems, appliances, and grounds not specifically identified as occupant responsibilities.
- Maintain cost accounting data for all work in separately identified MFH accounts.
- Do not exceed the annual cost limit specified by the Government for MFH maintenance.
- Develop and update a master listing of all Government-owned appliances. Provide an Appliance Replacement Program based on age, condition, warranties, and repair history.
-

4.3.1:2.10 Manage all Real Property, and conduct and record base comprehensive planning in the General Plan.

- Maintain the automated management system files for all real property records.
  - Scan and provide electronic images (tiff format) of drawings.
  - Provide drawing and document research assistance.
- Retain supporting documents as a permanent record, including current files of all:
  - Drawings (record, as-built, manufacturer, and shop) for all Government-owned facilities, appurtenances, and Government-contracted work.
  - Geographic information from the Global Positioning System (GPS) to include computer-aided mapping of the location of all facilities and their site plans.
  - Construction contracts, design criteria, analyses, and calculations.
  - Past and present facility configurations, cost amounts, and installed or removed real property equipment.
- Oversee the use of building space and make recommendations to the Base Civil Engineer for its effective use.
- Perform and record the results of a facility use validation inventory of all real property facilities and Real Property Installed Equipment (RPIE). (OT-2003-30065)
- Make inventory corrections upon approval of the Air Force Real Property Officer.
  - Inventory at least 75 different buildings annually in accordance with AFI 32-9005. Evaluate every building at least once every 5 years.
- Provide information for requests from HQ and other inquirers.
- Participate in investment project and program design and conceptual reviews to facilitate coordination of digging permits and site plans.
- Review all completed maintenance, repair, minor construction, improvement, and military construction project data, capitalize project costs, and update real property records.
- Record, obtain approvals for, and inspect all outgranted AF real estate.
  - Conduct inspections at least annually to assure grantees comply with outgrant terms and conditions and document results in the Automated Civil Engineering System–RP (ACES) and in the Real Estate Records.
- Annually inspect the full external boundaries of the AEDC reservation to prevent unauthorized use of Federal property.
  - Identify all encroachments and report such to the contracting officer within 1 week.
  - Inspect all markers and signage where permanent markers are not in place.
  - Document and sketch the location and extent of encroachment violations.
  - Record and maintain current geographic information to provide computer-aided mapping of the full external boundary.
    - Update this information every four years using GPS.
    - Update the General Plan to reflect survey changes.
    - Assure adequate boundary markings
- Maintain the General Plan; update the tabs (maps) at least annually. (OT-2003-30067)
  - Conduct planning surveys to support Plan development.
  - Assist in Plan administration.

4.3.1:2.11 Provide and maintain facility identification and general-purpose signs. Maintain safety markings on roadways, parking lots, roadblock barricades, guard posts, fire hydrants, and road crossings.

4.3.1:2.12 Execute a pest control program in accordance with State and EPA directives. Maintain records meeting Air Force Materiel Command requirements. (DI-MISC-80228)

4.3.1:2.13 Establish and execute an Adverse Weather Protection Plan. Include provisions for freeze protection, snow and ice removal, tornado and wind damage, and other severe weather conditions. (OT-2003-30069)

4.3.1:2.14 Maintain the AEDC facility lock and key program.

- Provide a trained and appropriately cleared locksmith to provide services, including supervising and changing combinations, instructing people in changing combinations, making keys, opening locked containers and vaults, and preparing items for reuse without degrading protection.
- Maintain security containers in accordance with Technical Order 00-20F-2.

4.3.1:2.15 Maintain the approved microform system for Real Property and Test Facility Drawings.

4.3.1:2.16 Interface with PWS 4.2 and 4.4 to define, integrate, and perform environmental, safety, health, and quality requirements in daily operations to reduce compliance risks.

- Certify refrigeration personnel and equipment in accordance with applicable state and EPA regulations. Maintain records of certification.
- Maintain operating logs to support the requirements of the AEDC Title V Major Source Operating Air Permit.

4.3.1:2.17 Plan and execute the AEDC Energy Management Program. (OT-2003-30080)

- Provide an active energy awareness program.
- Convene and participate in Energy Conservation Working Group and participate in Energy Steering Group meetings.
- Support Air Force utility contracts (electrical, natural gas, and fuels).
- Update the Defense Utility Energy Reporting System (DUERS). (OT-2003-30081)

4.3.1:3 DIRECTIVES:

4.3.1:3.1 Mandatory:

DOD Directive 4165.6
DOD 5126.46-M-2

AFPD 23-3	Energy Management
AFI 32-1021	Planning and Programming of Facility Construction Projects
AFI 32-1022	NAF Facility Construction Projects
AFI 32-1032	Planning and Programming Real Property Maintenance Projects Using Appropriated Funds
AFI 32-1051	Roof Systems Management
AFI 32-7062	Air Force Comprehensive Planning

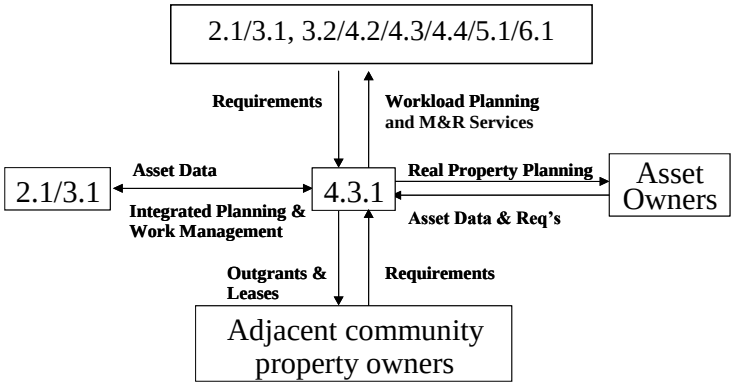
4.3.1:3.2 Guidance:

DoD Instruction 5000.1 and 5000.2 interim guidance and successor Instructions on the Defense Acquisition System

DoD 5000.2M	Defense Acquisition Management Documentation and Reports
AFPD 32-10	Installations and Facilities
AFPD 32-90	Real Property Management
AFI 32-1001	Operations Management

AFPAM 32-1004, Vol 3	Working Into Operations Flight - Facility Maintenance
AFPAM 32-1010	Land Use Planning
AFI 32-1023	Design and Construction Standards and Evaluation of Facility Construction Projects
AFI 32-1062	Electric Power Plants and Generators
AFI 32-1063	Electric Power Systems
AFI 32-1064	Electrical Safe Practices
AFI 32-7062	Air Force Comprehensive Planning
AFI 32-9001	Acquisition of Real Property
AFI 32-9002	Use of Real Property
AFI 32-9003	Temporary Use of Air Force Real Property
AFI 32-9004	Disposal of Real Property
AFI 32-9005	Real Property Accountability and Reporting
AFI 32-9007	Managing Air Force Real Property
AFI 65-601	Budget and Guidance Procedures, Volume 1, Chapter13
AFH 32-1084	Facility Requirements
General Plan Guide	HQ AFCEE Master Statement of Work for Base Comprehensive Plans
AFOSHS 91-501	Air Force Consolidated Occupational Safety Standard
TO 00-20F-2	Inspection and Preventive Maintenance Procedures For Classified Security Containers
USAF PM Guide	The United States Air Force ~~P~~roject Manager's Guide for Design and Construction

4.3.1:4 PRINCIPAL RELATIONSHIPS: The contractor provides project management and interface control in coordinating and executing the construction of new facilities or modification of existing facilities. Upon initiation of MILCON and MC projects, the contractor helps maintain close coordination with the HQ AFMC/CE, Corps of Engineers, applicable contractor functions, and the AEDC Operations Center. Consequently, this effort requires close interface, communication, and cooperation with asset managers, financial management, procurement, contractors, outgrant holders, lessees, surrounding municipalities and landowners, and the AF Real Property Officer and Base Civil Engineer. Coordination is required with environmental, safety, health, security, quality assurance, fire protection, Intelligence, Public Affairs, and other work review/approving functions.



4.3.1:5 STANDARDS OF PERFORMANCE:

Figure 4.3.1-1 SERVICE DELIVERY SUMMARY
Base Support Assets

Performance Objective	**PWS Paragraph**	**Performance Expectation**
Responsive, sound project planning support	4.3.1:2.1	Project planning, programming, and approval data are timely, correct, and accurate in 97% of the projects.
Valid, comprehensive annual and long-range plans and BMAR	4.3.1:2.1	Work planning and programming meets suspenses and accurately reflects Center needs and priorities 97% of the time.
Effective control of activity-level maintenance and repair work	4.3.1:2.1,2,3	Work control system and processes accommodate all Center efforts and provide valid data needed to plan, program, manage, and status each effort 96% of the time. Cost and schedule variances within limits. Rework is less than 1% of all jobs in any consecutive two-month period.
Effective M&R Projects Program	4.3.1:2.3,4	Program execution with no mission impact or loss of needed capability. Cost and schedule variances within limits. No more than one redesign or execution rework as a result of inadequate design. Design program meets 97% of schedule. No loss of year-end funding due to lack of design planning and completion.
Effective MILCON and test facility construction program	4.3.1:2.4	No major validated schedule deviations or negative customer or operational impacts.
Enhanced M&R processes	4.3.1:2.5	Improve M&R productivity by 5% per year through the use of reliability-centered maintenance and process improvements.
Effective Facility Utilization Program	4.3.1:2.10	Building space is effectively used. Status of utilization is readily available 100% of the time. Timely annual inventory 98% accurate and on schedule for 5-year completion cycle.

Accurate and accessible Real Property Records, including boundaries and outgrants.	4.3.1:2.10	Records are available on call and reflect latest status 99% of the time. Records of annual inspections, outgrants, and corrective actions are current and accurate 99% of the time.
Accurate General Plan.	4.3.1:2.10	Plan accurately depicts AEDC.
Visible and well-documented energy management program.	4.3.3:2.17	Annual and out-year program that incorporates program initiatives into daily operations and investments, and meets program goals.

4.3.2 EMERGENCY MANAGEMENT PLANNING AND OPERATIONS

4.3.2:1 SCOPE: This PWS element contains the work necessary to plan for and respond to perceived and actual situations involving emergency and disaster conditions. Potential situations include enemy attacks, natural disasters, accidents, incidents, and spills, which threaten life and impact the mission of AEDC. Support must be available 24 hours/day, seven days/week. Continuous training of the staff, supplemented by periodic exercises, is required to maintain proficiency.

4.3.2:2 REQUIREMENTS: The Contractor shall plan, develop, and execute a Base EM Program that complies with AFI 10-2501, and document the program in the Full Spectrum Threat Response (FSTR) Plan 10-2. (OT-2003-30130, OT-2003-30181). The contractor shall:

4.3.2:2.1 Respond to situations, which include:

- Warning and protecting base personnel.
- Conducting mission operations during fallout conditions.
- Exposure control.
- Shelter stocking and use.
- Emergency support to civil authorities.
- Civil support for military operations.
- Housing of off-base Air Force military personnel.
- Use of standard warning signals.
- Reporting, identification, containment, and disposition of hazardous chemical spills.

4.3.2:2.2 Manage EM services.

- Designate an EM Manager with overall program management responsibility.
- Plan, schedule, and support a recurring Planning Board meeting as required by the Center Commander.
- Perform annual staff assistance visits to all AEDC organizations that support the EM program if requested by the organization or higher authority to determine compliance with the FSTRP and other applicable AFI 32 Series directives.
- Develop procedures for:
  - Rescue of personnel
  - Priority evacuation of personnel and equipment.
  - Recovery of deceased personnel.
  - Isolation and decontamination of personnel, equipment, and facilities in accordance with the requirements of AFMAN 32-4004.
- Respond in a timely manner to incidents or accidents involving emergency and disaster conditions and take timely, effective actions to negate potential or resulting impact.
- Secure vital resources and maintain the safety and welfare of all personnel.
- Provide personnel and materials required by the On-Scene Commander.
- Operate the EM Control Center in support of emergencies.
  - Communicate with all specified teams.
  - Maintain communications with and report on-scene information to the Operations Center and/or Readiness Center, as dictated by the situation.
  - Coordinate restoration of essential communications for command and control.
  - Coordinate removal of debris and rubble to reinstate limited or normal operations.
  - Coordinate restoration of utilities, such as power, water, or sanitary systems.

- Coordinate maintenance of fire fighting, rescue, and hazardous materials (HAZMAT) response capabilities.
- Supervise radiological monitoring, contamination control, and decontamination operations.
- Direct and manage all EM specialized teams.
- Notify the Center Commander of all actions taken as soon as possible.

4.3.2:2.3 Function as Office of Primary Responsibility (OPR) for the Readiness Center.

- Develop, implement, and maintain plans and procedures; maintain supplies and equipment; and ensure comprehensive training as necessary to support the Commander, Battle Staff, and Battle Staff Support Team.
- Provide technical guidance for response activities.

4.3.2:2.4 Appoint and train personnel to comprise the disaster response force. Coordinate team assignments/removals with the EM Manager and the Base Civil Engineer.

- Maintain a current list of all assigned response force personnel.
- Provide training for all AEDC persons who support disaster operations.
- Establish and train an effective AEDC Exercise Evaluation Team to design, schedule, and evaluate exercises as required by AFI 10-2501.
- Conduct a minimum of four Government-managed and evaluated exercises annually, preferably one per calendar quarter.
- Evaluate response effectiveness and make improvements to correct all identified deficiencies.

4.3.2:2.5 Establish, operate, and manage the Protective Shelter Program in accordance with AFMAN 32-4005.

4.3.2:2.6 Maintain, store, and issue equipment to support the EM program in accordance with applicable technical orders. Check all equipment required by the disaster response force quarterly to verify its operational readiness.

4.3.2:2.7 Maintain liaison and cooperate with local and state authorities when involved in an off-base response.

- Respond to disasters and emergencies away from Arnold AFB when authorized by the AEDC Commander.
- Consider personnel and equipment used in these responses to be under the command and control of the on-scene commander and used in performance of the contract.

4.3.2:2.8 Mark, equip, and operate a vehicle designated the "Mobile Command Post" in accordance with AFI 10-2501. Install all base communications used for on and off-base response (including air-to-ground and cellular phones).

4.3.2:2.9 Assist the Government in war contingency and mobilization planning including war support plans, disaster preparedness plans, recall rosters, and appropriate checklists.

4.3.2:3 DIRECTIVES:

4.3.2:3.1 Mandatory:

DoD 5100.52-M	Nuclear Weapon Accident Response Procedures
AFPD 10-26	Counter-Nuclear, Biological, and Chemical Operational Preparedness
AFI 10-2501 As Supplemented	Full Spectrum Threat Response Planning and Operations
AFMAN 32-4004	Emergency Response Operations
AFMAN 32-4005	Personnel Protection and Attack Action

4.3.2:3.2 Guidance: None

4.3.2:4 PRINCIPAL RELATIONSHIPS: The Contractor coordinates work and directs personnel throughout AEDC in responding to incidents, accidents, and emergencies. In the event of off-base response, the contractor must be familiar with county and state laws and Tennessee EM Agency (TEMA) requirements so the Team can provide timely, effective assistance upon request. This effort requires close interface with local, state, and federal EM organizations, and local medical treatment facilities.

Comment [w1]:

Comment [w2R1]:

4.3.2:5 STANDARDS OF PERFORMANCE:

Figure 4.3.2-1 SERVICE DELIVERY SUMMARY
EM Planning and Operations

Performance Objective	**PWS Paragraph**	**Performance Expectation**
An effective FSTR Plan.	4.3.2:2	Plan and associated procedures adequately address 98% of all situation requirements, whether in exercises or in actual situations, and result in no loss of life or property.
Effectively managed EM Program.	4.3.2:2.1	No significant omission of emergency situation coverage. On-Scene Commander available onsite in all emergency situations. Operations appropriately documented.
Timely rescue and evacuation of threatened personnel; timely recovery of deceased personnel.	4.3.2:2.2	Operations meet requirements of AFI 10-2501 and FSTR Plan 10-2 with no lapses in safety and security. Likewise, in deceased personnel search and recovery operations, and in support of the Mortuary Officer as required.
Prepared Disaster Response Force Team.	4.3.2:2.4	Team is 100% trained and available to respond to any AEDC disaster situation.
An effective Base Exercise Evaluation Team.	4.3.2:2.4	Four annual exercises, which adequately address 99% of all situation requirements.
Effective Protective Shelter Program.	4.3.2:2.5	Qualified managers appointed for all shelters and shelters identified for peak population and forecasted usage, per AFMAN 32-4005.
Full cooperation with local communities, municipalities, and state agencies in off-base responses.	4.3.2:2.7	Requirements meet AFI 10-2501 without any oversights in coordination.

4.3.3 FIRE PROTECTION SERVICES

4.3.3:1 SCOPE: This PWS element contains the work necessary to provide 24 hours/day 7days/week fire protection and emergency medical services for Arnold AFB. Administrative and technical service functions will operate 40 hours/week during normal day shift hours. Authorized vehicles are listed below. Assigned vehicles may vary from those authorized due to the provision of substitute vehicles.

Description	Authorized	Assigned
P-19 Crash Vehicle	2	1
P-22/P-24 Pumper	3	3
P-10 Rescue Vehicle	1	1
Command Vehicle	2	2
Pick-up Truck	2	2
P-18 Water Tanker	1	1
Multi Cargo Truck	1	1
Ambulance	2	2
P-15 Crash Vehicle	1	1

4.3.3:2 REQUIREMENTS: The contractor shall provide Fire Protection Services, including Fire Prevention, Inspection, Training, Engineering, Rescue, and Emergency Medical Services in accordance with NFPA Code 1500. (OT-2003-30181)

4.3.3:2.1 Provide fire and emergency medical services and monitor fire alarm communications 24 hours/day, seven days/week in accordance with AFI 32-2001.

- Respond to all actual or potential fire, medical, and rescue emergencies. (DI-MISC-80480)
- Annually review operational procedures for fire fighting, emergency medical services, and rescue activities; determine the adequacy of fire fighting equipment; and assess manpower requirements.

4.3.3:2.2 Provide fire protection with special emphasis on fire prevention in the industrial test areas, military family housing area, visiting officer quarters, airfield, and services facilities.

- Provide fire investigation and fire reporting services for all emergency responses.
- Provide technical assistance and general support for all higher headquarters representatives during investigations of major fire incidents, loss of life, or injury-due-to-fire related incidents.
- Support mutual aid agreements entered into by the installation commander with local community fire protection organizations.

4.3.3:2.3 Conduct an annual physical and wellness examination to determine each fire fighter's fitness status.

- Participate in the fire department Physical Fitness Program and Wellness Program. Establish physical standards for fire fighters, which are at least equal to U.S. Civil Service Commission Qualification Standard GS-081, Fire Fighting and Fire Prevention Series, and meet NFPA 1001 and 1500 guidelines.

4.3.3:2.4 Certify fire fighters through a DoD-accredited fire fighter certification program

- Conduct recurring proficiency training in accordance with AFI 32-2001.

- Train all personnel in emergency care and cardiopulmonary resuscitation procedures.
- Utilize structural fire-training facilities provided by the Air Force.
- Provide advanced technical training and other advanced management courses using Air Force Fire Protection short courses, the DOD Fire Academy at Goodfellow AFB, or other approved training source.

4.3.3:2.5 Provide Fire Prevention Education through educational activities to develop good fire protection habits, such as recognition and elimination of fire hazards, fire reporting, and familiarization of emergency evacuation procedures.

- Give occupants of Military Family Housing an initial fire prevention education briefing within 30 days after occupancy of quarters.
- Conduct periodic fire drills and participate in base and command-initiated activities.
- Provide fire prevention lectures and demonstrations for all base personnel, including observation of Fire Prevention Week.
- Develop and implement a regulatory fire prevention publication in accordance with standards outlined in AFI 32-2001. This publication shall be written to convey local requirements not specifically identified in other Air Force regulations. (OT-2003-30083)
- Use AF Form 1487, Fire Prevention Visit Report, to document Fire Safety Deficiencies. Establish procedures for routing the form to the responsible building manager and maintaining a logbook of forms issued. File the forms by facility in the AF Form 218 folder. (OT-2003-30084)

4.3.3:2.6 Develop and implement an annual fire inspection schedule.

- Inspect facilities, fire suppression systems, fire/smoke detection and alarm systems, and portable fire extinguishers. Flush fire hydrants as required to assure continuous reliable operation.
- Record facility fire inspections on AF Form 218 or AF Form 1487, and maintain these records for each facility. (OT-2003-30084)
- Provide pre-fire plans for all major facilities. Use AF Form 1028, Facility Pre-Fire Plan to record each facility plan. (OT-2003-30086)
  - Provide a facility graphic layout as a supplement to the pre-fire plans.
  - Review and validate pre-fire plans at least every 2 years.
- Provide technical assistance in the review of facility designs, projects, work orders, and other work source documents, ensuring compliance with NFPA and DoD Fire Prevention directives.

4.3.3:2.7 Provide Emergency Response Planning.

- Coordinate with base Disaster Response Force officials for requesting or rendering assistance during either on-base or off-base disasters or emergencies.
- Be responsible for all rescue operations involving high-angle, confined spaces, aircraft, boats, vehicles, structural fires, wild land fires, water emergencies, and hazardous materials incidents.
- Provide 24-hour Advanced Life Support Emergency Medical service, as well as pre-hospital emergency evaluation and treatment, for occupational illness and injury for Center employees. Transport all emergency cases to the closest hospital or appropriate facility in Coffee or Franklin Counties.

- Perform custodial services and accomplish a limited amount of self-help maintenance, repair, and minor construction at the Fire Station and facilities assigned to the Fire Protection Branch to include sweeping, dusting, mopping, waxing, cleaning, and painting.
- Inspect and maintain equipment and vehicles. Record daily driver/operator maintenance and inspection services.
- Provide fully trained lifeguards at recreational beaches.
- Maintain the automated civil engineer system (ACES-FD) for fire department operations and training.

4.3.3:3 DIRECTIVES:

4.3.3:3.1 Mandatory: None

4.3.3:3.2 Guidance:

AFI 32-2001	The Fire Protection Operations and Fire Prevention Program
NFPA 1001	Standard for Fire Fighter Professional Qualifications
NFPA 1500	Standard of Fire Department Occupational Safety & Health Program
NFPA	Fire Codes

Tennessee Department of Health, Division of EMS, Emergency Medical Service Statute, Rules, and Regulations

4.3.3:4 PRINCIPAL RELATIONSHIPS: This effort requires interface with the AEDC populace, including all contractors and base tenants, surrounding community fire departments and medical treatment facilities, the Veteran's Administration, and the Base Fire Marshal.

4.3.3:5 STANDARDS OF PERFORMANCE:

Figure 4.3.3-1 SERVICE DELIVERY SUMMARY
Fire Protection Services

Performance Objective	**PWS Paragraph**	**Performance Expectation**
Effective base-wide fire protection with emphasis on fire prevention.	4.3.3:2.1,2	No significant injury to or loss of personnel, facilities, or equipment due to a preventable cause.
Well-trained, capable, and responsive department.	4.3.3:2.3,4	99% level of staffing, training, operations, and certifications according to NFPA, DOD, and AF guidance.
Informative Fire Prevention Education Program.	4.3.3:2.5,6	Annual fire prevention awareness training, educational activities, and exercises provided to 96% of base populace.
Effective response to incidents.	4.3.3:2.1,7	Personnel, facilities, systems, procedures, and equipment respond/function 98% as planned to prevent significant losses.

4.3.4 GROUNDS MAINTENANCE

4.3.4:1 SCOPE: This PWS element contains the work necessary to maintain the overall appearance of the Base grounds. Approximate areas to be maintained include:

- Grounds
  - 362 acres of improved
  - 766 acres of semi-improved
  - 180 acres of semi-improved (airfield)
  - 33,241 acres of unimproved
- Rights-of way
  - 55 miles around paved roads
  - 16 miles of railroad
  - 51 miles of vegetation encroachment prevention around other roads

4.3.4:2 REQUIREMENTS: The Contractor shall maintain grounds and rights-of-way. (OT-2003-30131, OT-2003-30181)

- Maintain and repair improved and enhanced grounds, cemeteries, FAMCAMP, and athletic fields listed in the Real Property Inventory.
  - Provide periodic mowing, fertilizing, erosion and dust control, plant disease control, planting, replacing trees and shrubs, mulching, and removal of grass and weeds growing in cracks of sidewalks and pavements.
  - Maintain the grass height between 2 and 4 inches. Assure grounds look well-manicured at all times.
- Maintain and repair all semi-improved grounds. Maintain the grass height between 4 and 10 inches.
- Mow, control erosion and dust, renovate and re-vegetate, and eliminate fire hazards.
- Maintain and repair unimproved grounds per Government directions.
- Provide a litter prevention and collection program to provide a well-kept appearance.
- Support special events, coordinating schedules and activities with the Base Civil Engineer.

4.3.4:3 DIRECTIVES: None

4.3.4:4 PRINCIPAL RELATIONSHIPS: The AEDC Base Civil Engineer is the primary focal point for coordination and guidance in accomplishing this effort. General safety practices must be exercised to protect personnel and equipment in all areas of the Base when grounds maintenance operations are performed.

4.3.4:5 STANDARDS OF PERFORMANCE:

Figure 4.3.4-1 SERVICE DELIVERY SUMMARY
Grounds Maintenance

Performance Objective	**PWS Paragraph**	**Performance Expectation**
Professionally groomed appearance of public rights-of-way, Center entrances, and A&E Building areas.	4.3.4:2	Grounds reflect the level of care required by their classification with no more than 2 validated complaints about the appearance of AEDC grounds.

4.3.5 JANITORIAL SERVICES & REFUSE COLLECTION AND DISPOSAL

4.3.5:1 SCOPE: This PWS element contains the custodial work necessary to perform janitorial services and refuse collection and disposal.

4.3.5:1.1 Janitorial Services: The floor service area is approximately 1.7 million square feet contained in 124 buildings. The floor areas include all administrative areas, shops, laboratories, test areas, support areas, offices, cafeterias, trailers, restrooms, computer rooms, test control rooms, the Dispensary, the Airfield Operations Building, the Credit Union, auditoriums, conference rooms, the Penthouse Gym in the A&E Building, the Fitness Center, Pass & Registration Office, the Community Activity Center (excluding wood shop, equipment checkout, and auto bays), and industrial, non-industrial, and common-use or public areas. The following areas are not covered:

- Self-supporting facilities (Base Exchange, Commissary Sales / Warehouse, ALC)
- Recreation facilities where fees are charged for usage (e.g., golf clubhouse and marina)
- Family Quarters, VOQ, Concessions
- Fire Station
- Gossick Leadership Center

4.3.5:1.2 Refuse Collection and Disposal: Approximately 7,800 tons of wastes are generated annually at AEDC. This includes all types of waste and debris, which must be removed from collection points and transferred to permitted disposal areas. Approximately 160 dumpster containers are placed about AEDC and require servicing, as well as 2 trash cans at each of 40 MFH units.

4.3.5:2 REQUIREMENTS: The Contractor shall:

4.3.5:2.1 Develop and maintain a Custodial Support Plan which scopes the program and includes policies and procedures for janitorial services and refuse collection and disposal. (OT-2003-30132, OT-2003-30181)

- Analyze each facility to scope, identify, organize, assign, and schedule the services required; these may vary by building, floor within a building, and by wing on a floor based on type, usage, and visibility.
- Specify frequencies, cost, and resources required.

4.3.5:2.2 Provide cleaning services in accordance with the approved Custodial Support Plan.

- Coordinate cleaning with the building manager, particularly for clean rooms and test areas when special safety and cleaning requirements are needed.
- Develop and implement detailed procedures for cleaning.
  - Industrial waste.
  - Medical waste at the dispensary. Adhere to state and federal cleaning requirements for medical facilities.
- Disinfect drinking fountains and restroom partitions, stalls, walls, toilet bowls, urinals, lavatories, showers, dispensers, and other surfaces using a germicidal detergent.
- Report damage to facilities, equipment, flooring, and fixtures to the building manager.
- Service restrooms so that operating supplies are always available.

4.3.5:2.3 Collect and dispose of refuse.

- Segregate refuse into reclaimable, salvageable, non-salvageable, and hazardous material.

- Provide a map of "pick-up" points and schedule.
- Maintain daily records of refuse and salvage collections. (OT-2003-30087)

4.3.5:2.4 Operate and maintain the construction and asbestos landfills.

- Maintain existing construction and asbestos landfills in accordance with the State of Tennessee Department of Environmental Conservation and US EPA Regulations.
  - Comply with AEDC's Class IV permit for the construction debris landfill.
  - Comply with AEDC's Class II permit for the asbestos debris landfill.
- Maintain a map showing the location, drainage features, and expected life of the landfills (operating hours and estimated annual use).
- Place no sanitary refuse, industrial chemicals, or hazardous wastes in the construction or the asbestos landfills (see permit conditions). Properly bag (or encapsulate) and cover all asbestos disposed of in the Class II landfill according to permit specifications.
- Use an off-base, permitted landfill for disposal of compatible sanitary refuse.

4.3.5:2.5 Develop and implement an Equipment Maintenance schedule to provide periodic maintenance and replacement of a percentage of Government-owned janitorial and refuse collection assets, including dumpster and other refuse container maintenance.

4.3.5:3 DIRECTIVES:

4.3.5:3.1 Mandatory:

AFI 32-7042 Hazardous and Solid Waste Compliance

Tennessee Department of Environment and Conservation Solid Waste Regulation (Rule 1200-1-7)

AEDC Landfill Permit (DML-16-102-0027 - Construction and IDL-16-102-81-Asbestos)

4.3.5:3.2 Guidance: None

4.3.5:4 PRINCIPAL RELATIONSHIPS: The Contractor has the responsibility to arrange for access to controlled areas for janitorial services. In areas where special cleaning is required, close coordination must be maintained. Close coordination with personnel from environmental, industrial hygiene, safety, and building management is required.

4.3.5:5 STANDARDS OF PERFORMANCE:

Figure 4.3.5-1 SERVICE DELIVERY SUMMARY
Janitorial Services and Refuse Collection and Disposal

Performance Objective	PWS Paragraph	Performance Expectation
Clean work facilities for Center personnel.	4.3.5:2.1,2	Janitorial services that satisfy the program plan 96% of time.
Effective collection and disposal of refuse, debris, and construction waste.	4.3.5:2.3,4	Meet 97% of program plan requirements while satisfying all local, state, and federal rules and regulations with no permit violations.

4.4 HEALTH SERVICES

4.4.1 INDUSTRIAL HYGIENE

4.4.1:1 SCOPE: This PWS contains the work required to identify and mitigate personnel health risks in the work place. This effort requires the implementation of an Industrial Hygiene Program.

4.4.1:2 REQUIREMENTS: The contractor shall implement, maintain, and document a comprehensive Industrial Hygiene Program for all Government and contractor personnel at AEDC (to include AEDC White Oak) in accordance with applicable federal, state, and Air Force regulations, and acceptable to the Government. (OT-2003-30180) (OT-2003-30181)

4.4.1:2.1 Assess all activities and workplaces (industrial and administrative), including tenant sites. (OT-2003-30089)

- Perform activity assessments using 29 CFR 1960, Subpart D as a guide.
- Evaluate, categorize, and document each workplace for risk in accordance with federal, state, and local priorities, and the guidelines outlined in AFI 48-145, Tables 2.1 and 2.2.
  - Develop and maintain a master workplace listing.
  - Survey Category 1 Workplaces annually.
  - Survey Category 2 Workplaces at least every two years.
  - Survey Category 3 Workplaces as needed.
  - Use calibrated direct-reading instruments to obtain referenceable measurements and collect samples for analysis by a certified laboratory when chemical/biological agents or physical/radiological hazards are involved.
  - Develop and provide recommendations for engineering controls, administrative controls, or personal protective equipment. Conduct follow-up surveys and investigations to determine if all corrective actions have been accomplished and are effective.
  - Consider the following evaluation factors as applicable:

Atmospheric Contaminants	Blood-borne Pathogens
Confined Spaces	Environmental Hazards
Ergonomics	Hazard Communication
Hazardous Materials Exposures	Hazardous Waste
Heat, Humidity, Cold Stress	Illumination
Indoor Air Quality	Noise
Oxygen Deficient Atmospheres	Personal Protective Equipment
Pollution Prevention/Substitution	Radiation Hazards
Respiratory Protection	Ventilation
Laser Sources	Radio Frequency

- Maintain a consolidated list of all noncompliant work places and shop folders of all surveys, reviews, documented worker exposures, and results of actions and recommendations. Employee exposure data will be made available to employees or their representative upon request.

4.4.1:2.2 Provide a hazard communication and assistance program.

- Include emergency planning and conform to OSHA, EPA, NRC, applicable State regulations, and AFOSH guidance.

- Provide technical guidance to emergency management personnel for detecting, handling, and disposing of physical, chemical, biological, and radiological hazards (PWS 4.3.2).
- Provide advice on decontamination procedures and personal protective equipment required for the situation.

4.4.1:2.3 Provide assistance in preparing:
- Health and radiation-related licenses and permits.
- Studies, surveys, and assessments.
- Industrial health and hygiene related programs.
- A medical surveillance program (PWS 4.4.2).
- Information required by regulating agencies and higher Air Force headquarters.

4.4.1:2.4 Designate, in writing, an Installation Radiation Safety Officer who will implement a radiation control program for all radiation-producing devices
- Provide technical assistance to operational activities in accordance with established Air Force radiation protection policies and AFOSH, OSHA, EPA, NRC or applicable State regulations.
- Implement a personnel monitoring dosimetry program and maintain records for all radiation workers.
- Maintain copies of all radiation permits or licenses issued to the base.

4.4.1:2.5 Assign a technical point of contact for laser and radio frequency sources.
- Maintain an inventory of radio frequency radiation emitters and lasers used on the installation. (OT-2003-30091)

4.4.1:2.6 Conduct a respiratory protection program that includes fit testing, training, and selection of appropriate respiratory protective devices.

4.4.1:2.7 Implement a Fetal Protection Program and evaluate occupational hazards to pregnant employees for potential risk to the mother and the unborn fetus.

4.4.1:2.8 Provide technical assistance to operations and facilities personnel in the implementation of asbestos and lead management and abatement programs.

4.4.1:2.9 Evaluate operations, maintenance, and investment project plans to identify OSHA compliance issues. Document the results of evaluations. (DI-SAFT-80106B)

4.4.1:2.10 Provide assistance in the analysis and evaluation of environmental issues and initiatives to PWS 4.2.1.

4.4.1:2.11 Submit industrial hygiene instrumentation and data acquisition systems for calibration. Submissions will be consistent with AFTO 00-20-14, Section 3.6, and any approved waivers.

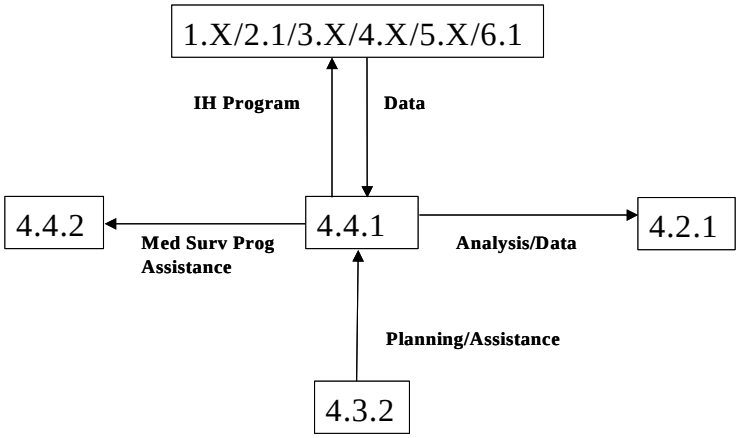
4.4.1:3 DIRECTIVES:

4.4.1:3.1 Mandatory - Compliance with technical aspects of reference documents is required. Administrative program requirements outlined in reference documents are for guidance only. The most stringent technical requirement identified by OSHA, AFI, AFOSH, or other reference document shall be used.

29 CFR 1960	Subpart D, Inspection and Abatement
AFI 32-1052	Facility Asbestos Management
AFI 32-4002	Hazardous Material Emergency Planning and Response
AFI 32-7040	Air Quality Compliance
AFI 32-7041	Water Quality Compliance
AFI 32-7042	Solid and Hazardous Waste Compliance
AFI 32-7045	Environmental Compliance Assessment and Management Program (ECAMP)
AFI 32-7080	Pollution Prevention Program
AFI 32-7086	Hazardous Materials Management
AFI 40-201	Managing Radioactive Materials in the Air Force
AFI 44-108	Infection Control Program
AFMAN 44-156(I)	Treatment of Biological Warfare Agent Casualties
AFOSH Std 48-8	Controlling Exposures to Hazardous Materials
AFOSH Std 48-9	Radio Frequency Radiation (RFR) Safety Program
AFOSH Std 48-14	Swimming Pools, Spas and Hot Tubs, and Bathing Areas
AFOSH Std 48-22	Occupational Exposure to Hazardous Chemicals in Laboratories
AFI 48-102	Medical Entomology Program
AFI 48-125	The US Air Force Personnel Dosimetry Program
AFI 48-136	Agency for Toxic Substances and Disease Registry Programs
AFOSH Std 48-137	Respiratory Protection Program
AFOSH Std 48-139	Laser Radiation Protection Program
AFI 48-145	Occupational Health Program, Tables 2.1 and 2.2
AFI 48-148	Ionizing Radiation Protection
AFPD 91-3	Occupational Safety and Health
AFOSH Std 91-25	Confined Spaces
AFOSH Std 91-501	Air Force Consolidated Occupational Safety Standard
AFOSH Std 161-21	Hazard Communication
AFI 91-301	Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program
T.O. 00-20-14	Test Measurement and Diagnostic Equipment (Sec. 3.6)
AFJMAN 32-1090	Noise and Vibration Control
DODI 605512	DoD Hearing Conservation Program

4.4.1:3 Guidance: None

4.4.1:4 PRINCIPAL RELATIONSHIPS: The Contractor must effectively cooperate and interact with all PWS owners and other center contractors to establish and maintain programs required by this effort.



4.4.1:5 STANDARDS OF PERFORMANCE:

Figure 4.4.1-1 SERVICE DELIVERY SUMMARIES
Industrial Hygiene

Performance Objective	PWS Paragraph	Performance Expectation
Effective Industrial Hygiene Program	4.4.1:2	Comply with regulatory requirements. Zero OSHA citations. No documented illnesses or validated compensation claims as a result of an ineffective Industrial Hygiene program.
Timely and thorough workplace exposure evaluations.	4.4.1:2.1	Surveys are completed within established timeframes. Surveys identify all major risks/hazards. Follow-up corrective actions minimize risk in 95% of situations.
Timely, complete, and accurate shop folders.	4.4.1:2.1	Folders updated within 5 workdays of event. No omission of pertinent workplace or exposure data.

4.4.2 OCCUPATIONAL HEALTH AND PREVENTIVE MEDICINE

4.4.2:1 SCOPE: This PWS contains the work necessary to provide occupational health and preventive medicine services for all of AEDC.

4.4.2:2 REQUIREMENTS: The contractor shall implement, maintain, and document a comprehensive Occupational Health and Preventive Medicine Program for Government and operating contractor personnel at AEDC in accordance with applicable federal, state, and Air Force regulations. (OT-2003-30180) (OT-2003-30181)

4.4.2:2.1 Assess the physical compatibility of individuals with their work and ensure the occupational health of the work force. Provide:

- Placement, periodic, and termination examinations;
- Fetal protection evaluation;
- Special examinations for hazardous assignments;
- Medical surveillance required by the Occupational Safety and Health Administration (OSHA) and Air Force Occupational, Safety and Health (AFOSH) standards.

4.4.2:2.2 Perform all medical services under the supervision of a physician with occupational medicine experience. The physician must meet the credentialing standards established in AFI 44-119 which include: Tennessee Medical License, Basic Cardiac Life Support Certification, Advanced Cardiac Life Support Certification, and credentials review by the National Practitioners Data Bank and Federation Data Bank.

4.4.2:2.3 Operate the Occupational Health Clinic from 7:00 a.m. to 3:30 p.m. Monday through Friday.

- Treat work-connected occupational injuries and illness of operating contractor employees, within available resources at the medical facility, to enable them to remain at work.
- Provide interim care prior to arrangement for private medical care.
- Limit treatment and evaluation of non-occupational injuries or illnesses to the minimum necessary for the employee to remain at work or seek care from the employee's personal physician.
- Provide X-ray, laboratory, and electrocardiograph services and visual, hearing, and pulmonary function testing required to accomplish occupational health examinations.
- Evaluate operating contractor employees prior to return to work after illness and injury.
- Provide 24-hour emergency services for all on-base AEDC employees and visitors.
- Administer immunizations required by job assignment to Government and operating contractor employees.

4.4.2:2.4 Provide basic consultation services and assistance to authorized military personnel when requested by the military Independent Duty Medical Technicians.

4.4.2:2.5 Provide laboratory and X-ray services, and hearing and pulmonary function testing for authorized military personnel.

4.4.2:2.7 Provide diet and nutrition counseling service twice a month for use by authorized Air Force personnel, and perform body fat measurements in support of the AF Weight Management Program. Assure weight scales meet calibration requirements.

4.4.2:2.8 Provide training to Government and operating contractor employees, including CPR classes, blood-borne pathogen training, and first aid training.

4.4.2:2.9 Provide health and wellness programs to Government ~~employees (including military spouses) and~~ and operating contractor employees including fitness assessments, smoking cessation, health risk assessments, stress management, and other services which promote a healthy lifestyle for all AEDC employees.
Provide access to the Health and Wellness Center equipment to all AEDC employees and military spouses.

4.4.2:2.10 Provide disease prevention services in accordance with federal and state standards.

- Perform monthly surveillance inspections of refuse disposal operations to assess sanitation conformance.
- Evaluate and monitor effectiveness of rodent and vector control programs. Correlate the vector surveillance data with disease incidence and local disease potential to determine any condition indicating vector-borne disease potentials.
- Conduct monthly public facility sanitation inspections on the Recreation Center, Fitness Center, Arnold Golf Course facility, Arnold Lakeside Club, and A&E Building Fitness Annex. Conduct quarterly inspections of the barbershop, visiting officers' quarters, and Temporary Lodging Facility (TLF) units. Include all recreational areas, public bathing areas, FAMCAMP, pools, and beaches during the operational season. (OT-2003-30092)

4.4.2:2.11 Inspect food service sanitation to assess compliance with AFI 48-116 and the FDA Food Code. (OT-2003-30093)

- Perform monthly sanitation inspections of dining/kitchen facilities. Ensure the food facility supervisor conducts and documents weekly self-inspections.
- Ensure each food handler is trained in the medical aspects of food service sanitation before starting work and at least once each calendar year thereafter. Use Air Force Medical Service Standards or other approved training standards.
- Ensure all vendor deliveries of food originate from an approved source and are inspected before delivery.

4.4.2:3 DIRECTIVES:

4.4.2:3.1 Mandatory:

AFI 44-119	Clinical Performance Improvement
AFI 48-102	Medical Entomology Program
AFI 48-116	Food Safety Program
AFI 48-117	Public Facility Sanitation
AFOSH STD 48-14	Swimming Pools, Spas and Hot Tubs, and Bathing Areas
FDA Code	1997 FDA Food Code

4.4.2:3.2 Guidance:

AFPD 40-5	Fitness and Weight Management
AFPD 40-1	Health Promotion
AFI 40-101	Health Promotion Program

AFI 40-104 Nutrition Education
AFI 40-501 The Air Force Fitness Program

AFI 40-502	The Weight and Body Fat Management Program
AFI 48-109	Epidemiological Services
AFI 48-110	Immunizations and Chemo prophylaxis
AFI 48-117	Public Facility Sanitation
AFI 48-119	Hearing Conservation Program
AFI 48-145	Occupational Health Program
AFOSH STD 48-139	Laser Radiation Protection Program

4.4.2:4 PRINCIPAL RELATIONSHIPS: The Contractor must effectively cooperate and interact with all work elements, Air Force functional manager(s), and other Center contractors to establish and maintain programs required by this effort.

4.4.2:5 STANDARDS OF PERFORMANCE:

Figure 4.4.2-1 SERVICE DELIVERY SUMMARIES
Occupational Health and Preventive Medicine

Performance Objective	PWS Paragraph	Performance Expectation
Effective Occupational Health and Preventive Medicine Program.	4.4.2:2.1,9	Occupational exams current for 90% of required employees. Patients perceive that Occupational Health Program is effective. Health and wellness programs promoting a healthy lifestyle are available to all DoD and operating contractor employees.
Timely emergency medical services.	4.4.2:2.3	Emergency services available 24 hours/day.
Comprehensive disease prevention services.	4.4.2:2.10,11	Surveillance inspections conducted in accordance with established schedule with no key areas omitted.

4.5 LOGISTICS READINESS

4.5.1 PURCHASING AND SUPPLY

4.5.1:1 SCOPE: This PWS element contains the work and material to acquire, account for, and manage all necessary supplies, equipment, and services for the Center.

4.5.1:1.1 This effort includes the operation of approximately twenty-five warehouse facilities with 270,000 square feet of space and outside storage of 727,000 square feet.

4.5.1:1.2 This effort is responsible for approximately 20,000 line items of Government-owned inventory valued at approximately $29 million. This inventory consists of approximately 4,500 demand leveled items (stock) valued at approximately $1 million and approximately 15,500 spare part items (facility spares) valued at approximately $28 million. The Contractor is the custodian and maintains component records for approximately 3,600 Facility Reconfiguration Items (FRI) valued at approximately $70 million. The Hazardous Dispensing Facility issues about 250 gallons annually. The estimated purchasing activity is about 40,000 line items per year with an approximate value of $37 million.

4.5.1:2 REQUIREMENTS: The Contractor shall purchase, account for, and manage supplies, equipment, and services for all authorized Center operations including tenant organizations. The contractor shall maintain supply services during normal working hours. (DI-MGMT-81580/T).

4.5.1:2.1 Acquire supplies, services, and equipment.

- Use best value commercial practices and maintain a Government-approved purchasing system.
- Requisition from Government sources when economically feasible.
- Maintain approved stock inventory levels within funding constraints.
- Administer subcontracts. The Contractor may request the services of Government contract administration and audit services in awarding and administering subcontracts.
- Meet Small and Small Disadvantaged Business Subcontracting Plan Goals.
- Utilize excess Government property whenever feasible.
- Coordinate on-site product demonstrations.
- Purchase special approval items, including maintenance of required forms, as specified in AF or Center regulations or procedures (i.e., hazardous items, computer items, etc.)

4.5.1:2.2 Receive, inspect, process, store, maintain, and distribute serviceable materials and supplies.

- Maintain receiving and shipping documentation and provide a point of contact for inquiries on receipt status for Air Force procurements.
  - Resolve shipping discrepancies.
  - Research and resolve problems associated with nonconforming materiel.
  - Submit nonconforming material and technical receiving inspection report summaries on a monthly basis to the Government.
- Track and document technical receiving inspections for stock materiel.
- Deliver and issue material and equipment as required, ensuring only authorized individuals sign/receive classified items, hazardous items, and munitions.

- Pickup and redistribute excess material items as needed.
- Operate specialized or segregated inside/outside storage areas for hazardous, classified, sensitive, nonconforming, and pilferable materials, munitions, scrap and disposal, and others materials as necessary.
- Dispense materials from the Hazardous Materials Dispensing Facility.
- Manage storage space.
- Maintain an Access Control/Resource Protection System for warehouses/storage areas approved by the Government.

4.5.1:2.3 Control, protect, preserve, and maintain Government inventory (whether acquired during performance of this contract or transferred from the incumbent contractor) in accordance with Federal Acquisition Regulation (FAR) 45 and the provisions of this contract, including:

- Identify potential excess inventory for review.
- Comply with TO 00-11-N-2 regarding use, storage, and disposal of radioactive materials in accordance with established procedures.
- Inventory material in accordance with schedules approved by the Government. Make adjustments after an inventory recount is performed and the dollar value is less than $100 for pilferable items, or less than $1,000 for unclassified items with a controlled item code "U". Research and resolve all other inventory discrepancies.
- Research and document warehouse refusals.
- Validate all active warehouse locations annually.
- Record inventory results, adjustments, and research documentation. (DI-MGMT-80259/T)

4.5.1:2.4 Maintain system records that support inventory management, purchasing (including Electronic Data Interchange (EDI) capability), and related financial accounting. Include at least:

- Name, description, National Stock Number (if available), vendor, purchase order number, unit price, unit of measure, location, and condition.
- Quantity on order, priority, and status.
- History, demand data, and relationship to applicable end item.
- Quantity received (or fabricated), issued, shipped, turned-in, transferred, adjusted (with justification data), disposition of excess, and on-hand inventory.
- Repairable asset accountability.
- Vendor rating.
- Posting reference and date of transaction.
- Cycle time for ordering and issuing.
- Procedures to provide support during a computer outage.

4.5.1:2.5 Evaluate statistical cost and transaction data to determine the adequacy of Materials Management.

- Develop, document, coordinate, and implement processes and procedures.
- Maintain a Document Control System.
- Develop and implement a self-inspection surveillance program. Maintain records of the schedule and results.
- Maintain a Zero Overpricing Program. (OT-2003-30097)

4.5.1:2.6 Unless specifically approved by the Contracting Officer, do not purchase or contract for the following items:

- Research and development services.

- Military construction projects (MILCON).
- Utilities.
- Fuels, including coal, gasoline, fuel oil, kerosene, and diesel fuel.
- Supplies and services to support the Air Force Commissary.
- Education services for Air Force personnel.
- Rental, lease, or purchase of automated data processing equipment exceeding $25,000 per purchase.
- Any item or groups of items for which the estimated value of the single purchase exceeds $25,000, except items for which a stock level is maintained in economic order quantities exceeding $25,000.

4.5.1:3 DIRECTIVES:

4.5.1:3.1 Mandatory:

FAR 44.3	Subcontracting Policies and Procedures
FAR 45 & DFARS 245	Government Property
FAR 52.244-2	Solicitation Provisions
DFARS 252.219-7003	Solicitation Provisions
AEDC Std. D4	AEDC Safety, Health, and Environmental Standard Compressed Gas Cylinders
T.O. 00-110N-2	Radioactive Waste Disposal

4.5.1:3.2 Guidance:

DOD 4145.19-R-1	Storage and Materials Handling
DOD 4160.21-M	Defense Reutilization and Marketing Manual

4.5.1:4 PRINCIPAL RELATIONSHIPS: This effort provides supply, purchasing, and inventory operations for all AEDC functions. Hazardous material management operations require a close working relationship with AEDC Environmental Management.

4.5.1:5 STANDARDS OF PERFORMANCE:

Figure 4.5.1-1 SERVICE DELIVERY SUMMARY
Purchasing and Supply

Performance Objective	PWS Paragraph	Performance Expectation
Operational Government-approved purchasing system.	4.5.1:2.1	Available 100% of the time.
Achievement of Small and Small Disadvantaged Business Subcontracting Plan Goals.	4.5.1:2.1	100% of the time.
Timely purchase, receipt, and distribution of materials and services.	4.5.1:2.1-2	Process 90% of all items within 6 work days (excluding vendor lead-time).
Accurate accountability and stewardship of stored materiel.	4.5.1.2.3	Warehouse refusal rate less than 0.4%. Inventory accuracy rate of 97%. Past-due rate less than 10%.
Timely and complete warehouse validations.	4.5.1.2.3	Accomplished in accordance with approved schedule 95% of the time.
Current, accurate, documented procedures.	4.5.1:2.5	Procedures up to date 95% of the time with all key processes documented.
Only authorized procurements.	4.5.1:2.6	100% of the time.

4.5.2 TRANSPORTATION

4.5.2:1 SCOPE: This PWS focuses on furnishing a diverse, safe, and serviceable fleet that satisfies transportation needs to support the AEDC mission. It contains the work necessary to provide operations and maintenance of vehicles and all shipping and travel functions.

Approximate annual workload:

- Maintain 354 vehicles (cars, trucks, material handling equipment, cranes, etc)
- Maintain 600 pieces of equipment (weed-eaters, utility vehicles, pumps, generators, and trailers)
- Arrange for 200 personal property shipments.
- Make travel arrangements for 2,500 trips.
- Quote 1,000 freight rates and routings for procurement purposes.
- Package and ship 10,000 items.
- Receive, verify, and process 6,500 freight bills.
- Arrange for 5 rail-car movements on and off AEDC.
- Provide chauffer service for 400 runs to local airports.
- Transport 7200 work crews to base work sites.

4.5.2:2 REQUIREMENTS: The contractor shall provide, control, operate, service, and maintain a diversified fleet of contractor and Government-furnished, general and special purpose vehicles and equipment in a cost effective manner. This effort encompasses all necessary administrative functions, including commercial traffic management and arranging for transportation with commercial carriers for all Center personnel.

4.5.2:2.1 Provide a safe, reliable, diverse fleet of vehicles for base operations in accordance with TO-36-1-191, Chapter 1, to include:

- Replacement of Government furnished equipment (GFE, all registered vehicles) with contractor furnished equipment (CFE, all vehicles) when the GFE becomes uneconomical to operate or repair. The contractor must return GFE vehicles to the Government for proper disposal. (OT-2003-30153)
- Use of GSA lease vehicles, only if approved by the Government transportation representative (GTR) based on a certified cost-benefit analysis.
- Documentation of vehicle dispatches in the On-line Vehicle Interactive Management System (OLVIMS) unless waived by HQ Air Force.
- Daily and on-call on-base transportation of personnel, equipment, supplies, or other cargo.
- Assuring safety and security of cargo.
- Documentation of oral and written requests for transportation support.
- U-drive vehicles as authorized by the GTR.
- Support activation or exercise of contingency plans as directed by the GTR.
- A central point for control of assigned vehicles. Forward requests with rationale for new vehicles to the GTR for approval.
- Chauffeur service, by reservation, 24 hours a day, seven days a week, to and from commercial air terminals at Nashville TN, Chattanooga TN, and Huntsville AL. Provide transportation service for MILAIR passengers and aircrews to and from AEDC and surrounding city airfields.
- Extend full courtesies to distinguished visitors, such as opening doors and assisting with their baggage.

  - Dress appropriately for the services to be provided (uniform not required).
- Dispatch of vehicles outside the Permissible Operating Distance (POD) only with approval of the GTR.
- Provision or coordination of on-call, 24-hour wrecker service for authorized vehicles within the POD.

4.5.2:2.2 As the base Operator Records and Licensing Office, perform the following drivers licensing and records functions:

- Validate operators' licenses for personnel who operate vehicles over 14,000 GVW, 15-passenger vehicles, and special purpose vehicles.
- Maintain a copy of vehicle operator lesson plans.
- Establish procedures to train, road test, and license military personnel who require a Government driver's license to operate a vehicle 14,000 GVW and over, or having a capacity of greater than 15 passengers.

4.5.2:2.3 Maintain safe, reliable GFE vehicles and equipment.

- Obtain GTR approval prior to repairing a vehicle when the cost estimate exceeds the one-time repair limit specified in TO 36-1-191.
- Operate and maintain the Vehicle Washing Facility (OT-2003-30151).
- Provide timely vehicle repair.
- Provide an after-hours point of contact to the Operations Center.
- Provide mobile maintenance for vehicles and equipment that can't be economically delivered to vehicle maintenance.
- Accomplish local modifications to vehicles only after approval by the GTR.
- Develop and execute a scheduled maintenance plan for all GFE vehicles.
- Prepare, ship, and store Government vehicles in accordance with guidance in T.O. 36-1-191.
- Maintain vehicle maintenance status records, using OLVIMS, and provide to the GTR. (OT-2003-30161)
- Operate and maintain a Government fuels service station in accordance with AFI 23-204.
  - Prepare and submit On-Base fuel consumption report to the GTR.

4.5.2:2.4 Provide transportation of Center personnel and materials.

- Plan and process inbound and outbound shipments, using the Cargo Movement Operating System (CMOS) for Government shipments.
- Request routing instructions from Military Traffic Management Command (MTMC) on shipments meeting criteria outlined in DOD 4500.9-R, Chapter 202, Part 2, Section C.
- Use commercial carriers based on best value and service required.
- Pack all items for shipment in accordance with AFJMAN 24-204, AFI 24-202, and specific instructions provided on DD Form 1149, or commercial best practices.
- Mark and label all items in accordance with MIL-STD-129, AFI 24-201, or commercial best practices.
- Ship aircraft engines in accordance with T.O. 00-85-20.
- Pack, certify, and document all military shipments of hazardous cargo, classified cargo, and valuable shipments in accordance with AFJMAN 24-204, CFR Title 49, AFI 24 -201, MIL-STD-129 Paragraph 3-9; and/or DOD 4500.32R.

- Provide personnel authorized to pack, crate, and certify shipments of explosives and other dangerous articles who are qualified IAW AFJMAN 24-204 and DOD 4500.9-R Part 2.
- Demilitarize, decontaminate, and ship excess property when directed.
- Provide documentation for processing claims.
- Arrange shipment and storage of household goods, unaccompanied baggage, and privately-owned vehicles for Government personnel.
  - Process and re-certify inbound Do-It-Yourself movement of household goods.
  - Maintain files of outbound personal property shipment applications.
  - Counsel Government personnel on entitlement and responsibilities.
  - Assist Government personnel in filing personal property claims.
  - Provide travel agency services to arrange commercial and military travel for official travelers.
  - Provide for airline, hotel, and car rental reservations.
  - Counsel official travelers on JTR requirements.
  - Prepare weekly Airline Reporting Corporation reports for payment of previous week's airline tickets.
  - Maintain historical information on reservations and tickets issued.

4.5.2:3 DIRECTIVES:

4.5.2:3.1 Mandatory:

49 CFR	Code of Federal Regulations, Title 49
AFMAN 24-204	Preparation of Hazardous Materials for Military Air Shipments
JFTR, V I & II	Joint Federal Travel Regulations
T.O. 00-85-20	Engine Shipping Instructions
T.O. 36-1-191	Technical and Managerial Reference for Motor Vehicle Maintenance
T.O. 36A-1-1301	Vehicle Management Index File

4.5.2:3.2 Guidance:

AFI 23-204	Organizational Fuel Tank
AFI 24-101	Passenger Movement
AFI 24-201	Cargo Movement
AFI 24-202	Preservation and Packaging
AFI 24-301	Vehicle Operations
AFI 24-302	Vehicle Maintenance Management
AFI 36-3020	Family Member Travel
AFJMAN 24-306	Manual for the Wheeled Vehicle Driver
AFMAN 24-307	Procedures for Vehicle Maintenance Management
DOD 4500.9-R, P1, 2 & 4	Defense Traffic Management Regulation

DOD 4500.34-R	Personal Property Traffic Management Regulation
DOD 4500.36-R	Management Acquisition and Use of Motor Vehicles
MIL STD 129	Military Marking for Shipment and Storage
PPCIG 1 & 2	Personal Property Consignment Instruction Guide

4.5.2:4 PRINCIPAL RELATIONSHIPS: This effort covers the vehicle requirements and traffic management for all Center operations and personnel.

4.5.2:5 STANDARDS OF PERFORMANCE:

Figure 4.5.2-1 SERVICE DELIVERY SUMMARY
Transportation

Performance Objective	PWS Paragraph	Performance Expectation
Cost effective provision and management of an appropriate vehicle fleet.	4.5.2:2.1	'Best value' acquisition and management of fleet in accordance with DoD 4500.36-R.
Safe, reliable vehicles to satisfy AEDC transportation needs in a timely and efficient manner.	4.5.2:2.1	Meet customer requests 96% of the time. No impact to mission attributed to unsafe vehicles.
Timely vehicle repairs.	4.5.2:2.3	Achieve 24-hour turn-around-time 70% of the time.
Quality preventive maintenance of vehicles.	4.5.2:2.3	Vehicle not returned for same repairs within the same month 70% of the time.
Serviceable vehicle availability.	4.5.2:2.3	90% Vehicle-In-Commission (VIC) rate.
Timely and safe cargo processing and shipment	4.5.2:3.4	Expedited cargo shipments within 24 hours. Routine shipments within 5 days 90% of the time.

4.5.3 FOOD SERVICES

4.5.3:1 SCOPE: This PWS contains the work and material required to provide food services at AEDC. Provide food services Monday thru Friday unless otherwise directed. The contractor may use existing government equipment or furnish his own equipment. The government will provide utility service and building maintenance. Customers served daily average 145 for breakfast and 644 for lunch.

4.5.3:2 REQUIREMENTS: The Contractor shall furnish food services to contractor and Government personnel at AEDC.

- Operate a food services program with the goal of making it self-supporting; provide lunch service as a minimum.
- Operate the Arnold Room inside the A&E building on a reservation-only basis.
- Operate and maintain food service vending machines, except in those areas reserved for the Tennessee Department of Human Services, Blind and Visually Impaired Services.
- Satisfy all food handlers' health and training requirements and meet state and AF requirements.

4.5.3:3 DIRECTIVES:

4.5.3:3.1 Mandatory:
AFI 48-116 Food Safety Program

4.5.3:3.2 Guidance:
None

4.5.3:4 PRINCIPAL RELATIONSHIPS: Food services interfaces with all Center personnel.

4.5.3:5 STANDARDS OF PERFORMANCE:

Figure 4.5.3-1 SERVICE DELIVERY SUMMARY
Food Services

Performance Objective	PWS Paragraph	Performance Expectation
Self-supporting operations	4.5.3:3.2	FY 04 Loss < $116,600
Quality operation of food services.	4.5.3:3.2	Less than 5 valid complaints on food palatability or serving sanitation per 6-month period.

4.5.4 MUNITIONS

4.5.4:1 SCOPE: This PWS establishes responsibilities for the accountability, safety, security, storage, shipping, receiving, inspection, maintenance, transportation. In addition, it outlines responsibilities to assist Munitions Accountable Systems Officer (MASO) with disposition processing of munitions when required.

4.5.4:2 REQUIREMENTS: The contractor shall provide adequate storage, accountability and security for munitions until expended, consumed, or removed from the Air Force installation. Follow proper housekeeping and warehousing principles in a cost effective manner.

4.5.4.2.1 Initiate, coordinate, and aid in enforcement of Courtesy Storage Agreements with using organizations desiring storage for DoD and Non-DoD managed munitions in accordance with *AFI 21-201*. The MASO will approve Courtesy Storage Agreements.

4.5.4.2.2 Assist the MASO with all munitions inventories.

4.5.4.2.3. Ensure explosive storage facilities and operating sites are maintained in a safe manner by observing good housekeeping practices in accordance with *AFMAN 91-201, T.O. 11A-1-10, 11A-1-42, 11A-1-46, 11A-1-60 and 11A-1-61-4.* Perform periodic facility inspections and develop work orders for facility repairs/upgrades as needed.

4.5.4.2.4. Maintain copies of approved explosive site plans for munitions storage facilities and operating sites as well as rail holding areas. In addition, maintain copies of the Lightning Protection System and static grounding inspection results in accordance with *AFI 21-201*.

4.5.4.2.5. Ensure designated smoking areas are approved and posted in the Munitions Storage Area in accordance with *AFMAN 91-201.*

4.5.4.2.6 Inform Security Forces of changes in magazine content affecting security classification or risk categories in accordance with *AFI 21-201.*

4.5.4.2.7 Inform the installation Fire Department of hazard class division 1.1 explosive munitions movements to/from the Munitions Storage Area or changes in facility fire/chemical symbols in accordance with *AFI 21-201*.

4.5.4.2.8 Establish and maintain a Master Storage Plan (MSP) in accordance with *AFI 21-201*, and forward an electronic copy to the MASO. When changes occur, provide a new copy of the Master Storage Plan with a summary of changes.

4.5.4.2.9. Store, maintain and transport munitions in accordance with the technical order and/or data package specific to that item. Maintain required technical orders for DoD managed munitions and/or technical data packages for Non-DoD managed munitions in accordance with *T.O. 00-5-1 and 00-5-2*.

4.5.4.2.10 Establish and follow written procedures. These procedures must be coordinated through Security and Safety with subsequent approval by the MASO. Subject areas that will be included in procedures include:

- Explosive safety practices, storage, and operations in accordance *AFMAN 91-201 and AFI 21-201*.
- Entry control procedures for the Munitions Storage Area in accordance with *AFI 21-201 and AFI 31-101*.
- Key and lock control, maintenance, and auditing of munitions storage facilities and operating sites protecting Arms, Ammunition and Explosives (AA&E) in accordance with *AFI 21-201 and AFI 31-101*.
- Movement control procedures in accordance with *AFI 21-201*.
- Inbound/outbound munitions shipments and general munitions transportation support.
- Management, control, certification, inventory, and the process for final disposition of munitions containers. In addition, provide procedures for packaging residue, scrap and demilitarization of inert munitions as prescribed in accordance with *T.O. 11A-1-10, T.O. 11A-1-42, T.O. 11A-1-60, AFI 21-201, and AFMAN 91-201*.

4.5.4.2.11 Assist the MASO with munitions serviceability and surveillance inspections with a certified munitions inspector appointed in writing by the Chief of Logistics Readiness Division. Individual must meet minimum requirements in accordance with AFI 21-201 and T.O. 11A-1-10 prior to appointment.

4.5.4:3 DIRECTIVES:

4.5.4:3.1 Mandatory:
AFI 21-201, *Management and Maintenance of Non-Nuclear Munitions*
AFI 32-1065, *Grounding Systems*, Table 1, items 11 and 12
AFMAN 91-201, *Explosive Safety Standards*
T.O. 11A-1-10, *General Instructions – Munitions Serviceability Procedures*
T.O. 11A-1-42, *General Instructions for Disposal of Conventional Munitions*
T.O. 11A-1-46, *Firefighting Guidance, Transportation and Storage Management Data*
T.O. 11A-1-60, *General Instructions, Inspection of Reusable Munitions Containers and Scrap Material*
Generated From Items Exposed to/or Containing Explosives
T.O. 11A-1-61-4, *Storage and Outloading Instructions Conventional Munitions (Storage Drawings for Igloos, Stradley and Standard Type Magazines and Miscellaneous Palletizing Drawings)*
Conventional Munitions Restricted or Suspended (CMRS)

4.5.4:3.2 Guidance:
DoD 5100.76-M, *Physical Security of Sensitive Conventional Arms, Ammunition and Explosives*
DoD 6055.9-STD, *DoD Ammunition and Explosive Safety Standards*
DoD 4160-21M, *Defense Materiel Disposition Manual*
AFI 31-101, *The Air Force Physical Security Program*

4.5.4:4 PRINCIPAL RELATIONSHIPS: Munitions are required for the daily operations in Security Forces, Office of Special Investigation and Logistics Plans base mobility requirements as well as test projects. This function coordinates with test project managers and engineers.

4.5.4:5 STANDARDS OF PERFORMANCE:

Figure 4.5.5-1 SERVICE DELIVERY SUMMARY
Munitions Management

Performance Objective	PWS Paragraph	Performance Expectation
Proper accountability of munitions	4.5.4	0 losses
On-time delivery and pickup of munitions	4.5.4:2.10	0 test delays due to munitions support
Safe and secure operations	4.5.4:2	At least 90% overall on monthly reviews

5.1 INFORMATION TECHNOLOGY

5.1.1 COMPUTER AND NETWORK SERVICES

5.1.1:1 SCOPE: This PWS element includes all planning, designing, testing, configuration management, integration, systems administration and maintenance support for Information Technology (IT) computers and networks (including IT resources in test and plant assets).

- Systems include multimode and single mode fiber optic and copper-based networks with possible growth to 10,000 or more nodes.
- The Central Computer Facility operates 24 hours/day, 7 days/week for all systems. A list of the Air Force Standard systems currently operational at AEDC and supported by the contractor is listed below in table 5.1.1-1.
- A Network Control Center (NCC) is staffed 24 hours/day, 7 days/week except for those periods when the Central Computer Facility is shut down.
- Information Assurance (IA) is required for more than 500 systems processing classified information, and over 4,000 systems processing sensitive but unclassified information. The contractor controls the COMSEC account and provides cryptographic maintenance support for the Center. The contractor also assists the Air Force in the execution of the AEDC-wide COMPUSEC, EMSEC, and IA Awareness programs.
- Typically, software development and maintenance is provided to 2500 users and includes 15,000 support calls and 600 change requests annually. Additional scope is given in Appendix 5.1.1-1.
- The Contractor maintains approximately 15,000 computers and network services hardware components located throughout AEDC. Thirty to fifty maintenance calls are received daily.
- IT planning must address requirements for all information technology and information services. Typically, there are approximately 15 studies annually in support of higher headquarters taskings.
- Approximately 300 requests for validation of IT requirements are processed in a 12-month period. Typically no more than 5 Communications-Computer System Installation Records (CSIRs) are created and/or updated monthly.
- Typically 2200 training slots are funded annually for students to receive formal training in personal computing applications, workstations, network orientation, and advanced applications. This training includes classroom instruction, computer-based training, and video presentations. The computing training center includes four classrooms, each containing 10 student workstations plus an instructor workstation.

5.1.1:2 REQUIREMENTS: The Contractor shall provide systems engineering and technical support for defining, planning, managing, and executing projects/programs to repair, modernize, improve, and acquire Information Technology assets and capabilities. (OT-2003-30181)

5.1.1:2.1 Support Information Technology (IT) Planning.

- Annually update the AEDC IT Basewide Integrated Plan (OT-2003-30108), including all AEDC information technology requirements. Align with the AFMC System Telecommunication Engineering Manager (STEM) Blueprint and AFMC IT strategic direction.
- Support WBS 2.1 in developing IT Program Management Plans.
- Apply Earned Value Management as directed by the government.

- Support the Government in strategic planning and capital planning.
- Develop an AEDC information technology architecture. Identify and document IT architectural standards. (OT-2003-30109)
- Conduct studies and assist in responding to taskings related to IT when directed by the Government.
- Maintain information required to report metrics to higher headquarters. (OT-2003-30032)

5.1.1:2.2 Manage IT resources throughout their life cycles.

- Execute a Communications-Computer Systems Requirements Document (CSRD) process, as directed by AFI 33-103, to manage and validate IT requirements.
  - Maintain and disseminate Government-approved procedures for acquisition, use, and disposal of AEDC communications-computer systems.
  - Recommend approval or disapproval of requirements and propose technical solutions.
  - Maintain CSRD tracking data.
- Plan, organize, coordinate, implement, and formally test system upgrades and replacements.
- Acquire IT resources in accordance with approved IT investment program management plans.
- Maintain an automated inventory of all AEDC information technology equipment and provide inventory reports as required. Any system used in lieu of the Air Force standard system (Information Processing Management System) must be approved by the Government, and must be capable of producing reports and data that fulfill the Air Force-directed requirements for inventory management and control.
- Dispose of communications-computer systems no longer needed or serviceable in accordance with PWS 4.5.1.
- Schedule all system outages using the AEDC Consolidated Scheduling Process.
- Ensure and document the capability to recover quickly from events that damage critical communications-computer system equipment or destroy essential data.

5.1.1:2.3 Operate and maintain all AEDC network assets in accordance with AFI 33-115 Volumes I & II (Section A2.3, Certification Process, is guidance only).

- Operate a centralized Network Control Center (NCC).
- Manage software licenses and installed software.
- Control implementation and changes by administration of a Certificate-to-Operate process and by ensuring consistency with the AEDC IT Basewide Integrated Plan.
- Provide a NCC help desk to serve as the single point for:
  - Receiving and managing all communications and computer system trouble reports, including computers, telephones, radios, and pagers. Operate 24 hours per day, 7 days per week.
  - Performing appropriate in-processing and out-processing of all AEDC personnel, including processing requests for information services, granting necessary computer access, revoking computer access and recovering telephone Personal Identification Number (PIN) cards, SecurID cards, and Fortezza cards.
- Provide network accessibility to off-base customers as appropriate.
- Manage user requests (e.g. work and trouble tickets) with the Government Remedy Action Request System.
- Report network outages to the Operations Center (PWS 3.1).

5.1.1:2.4 Manage and maintain IT systems which support, test facility control, health monitoring, data acquisition and processing, data analysis and evaluation, modeling and simulation systems, scientific computer applications, and management information. Systems include hardware, firmware, operating systems, system utilities, applications (excluding requirements identified in 5.1.1:2.6) and database management software.

- Maintain hardware, software, and firmware according to manufacturer's specifications.
- Maintain availability data and operational and maintenance logs including details explaining the cause of operational interruptions to include time, impact, duration, and remedy.
- Perform software configuration management of all software, including software in development.
- Develop and maintain Communications-Computer System Installation Records (CSIRs) in accordance with AFI 21-404. Completed CSIRs shall be submitted to the 38th Engineering & Installation Group, Tinker AFB, OK.
- Administer and manage information system data and databases.
- Manage classified and unclassified archival data storage.
- Provide user support for all computer systems.

5.1.1:2.4.1 Support the High Performance Computing Distributed Center (HPC DC).

- Operate and maintain computer systems and associated equipment.
- Provide utilization reports to external organizations.
- Maintain a web site.
- Gather and document computational/network requirements.
- Support preparation of proposals submitted to the HPC Modernization Office.
- Perform account administration, user orientation and training.

5.1.1:2.4.2 Support Air Force Standard and downward-directed systems listed in Table 5.1.1-1. Descriptions of the systems in the table are provided in Appendix 5.1.1-2. Operate and maintain AEDC's Geographical Information Systems to meet requirements stated in PWS 4.2.1 and 4.3.1.

Table 5.1.1-1 STANDARD SYSTEMS

System/Software	Function	Contractor Role
Accessory Manager	PC connectivity to JOCAS II	Help Desk
ABSS	Automated Business Support System	Maintain/Help Desk
ACES ACES/FD	Automated Civil Engineering System including the Fire Department module	Maintain/Use/Help Desk
AFMC BPI	AFMC Business Process Indicator Reporting System	Use
AF Portal	Air Force portal	Help Desk/Use
AFMC Portal	Air Force Materiel Command portal	Help Desk/Use

System/Software	Function	Contractor Role
APIMS	Air Program Information Management System	Us
CITS Firewall	Combat Information Transport System	Maintain/Use/Help Desk
CMOS	Cargo Movement Operating System	Use
DM-HMMS	Hazardous Materials Management System	Maintain/Use/Help Desk
DTM	Tivoli Desktop Management	Maintain/Use/Help Desk
DUERS	Defense Utility Energy Reporting System	Use
DUSD (I&E) Internet Data Call System	Environmental Protection and Compliance Status Reporting System	Use
EQDB	AFMC Environmental Quality Project Programming System	Use
Exchange, Outlook	E-mail program and client	Maintain/Use/Help Desk
FAS	Fuels Automation System	Maintain/Use
GAFS/BQ	General Accounting Finance System	Interface
GeoBase	Geographic Information System	Maintain/Use/Help Desk
InfoConnect	PC connectivity to JOCAS II	Maintain/Use/Help Desk
JOCAS II	Job Order Cost Accounting System	Maintain/Help Desk
PAMS	Precision Measurement Automated Management System.	Maintain/Use/Help Desk
PureEdge	PureEdge Internet Commerce System	Use/Help Desk
LeaveWeb	Leave tracking system for military personnel	Maintain/Help Desk
Microsoft Office	Dept of the Air Force standard office tool suite	Maintain/Use/Help Desk

System/Software	Function	Contractor Role
MDCPDS	Modern Defense Civilian Personnel Data System	Maintain/Help Desk
MILMOD	Modernize Military Personnel Data System	Maintain/Help Desk
OLVIMS	On-Line Vehicle Information Management System	Use
RAPIDS	Real-time Automated Personnel Identification System	Help Desk
Remedy Action Request System	CITS trouble ticket tracking system	Maintain/Use/Help Desk
SFMIS	Security Forces Management Information System	Maintain/Use
TMS	Telephone Management System	Maintain/Use/Help Desk
WINPC3VT	Terminal emulation for PC-III	Maintain/Help Desk
	Notes: Maintain = maintain a server and/or software Use = enter data into or get data out of Help Desk = provide Help Desk support for users.	

5.1.1:2.5 Ensure that Government-owned software developed under this contract is developed in accordance with:

- Best processes and practices known to reduce cost, schedule and performance risk. These processes and practices should demonstrate the ability of the organization to obtain certification at Level III or higher on the Software Engineering Institute's Integrated Capability Maturity Model for systems engineering, software engineering, Integrated Product and Process Development and supplier sourcing.
- Software systems design and development based on systems engineering principles to include: 1) architectural-based software systems that support open system concepts, exploit COTS computer system products, and allow incremental improvements based on modular, reusable, extensible software; 2) Government and commercial software reuse opportunities before developing new software; 3) selection of programming language in context of the systems and software engineering factors that influence overall life-cycle costs, risks, and the potential for interoperability.
- Software measurement processes in planning and tracking the software developed/acquired and assess and improve the software development process and the associated software product.
- The following portions of DoDD 8320.1:

  - Implement data administration in ways that provide clear, concise, consistent, unambiguous, and easily accessible data DoD-wide, and that minimize the cost and time required for transforming, translating, or researching differently described, but otherwise identical data.
  - Use DoD standard data elements when stating information requirements and when designing, developing, or modifying information systems.
  - Convert nonstandard data acquired from commercial-off-the-shelf data sources or other sources external to the Department of Defense to DoD standard data elements only when justified by mission requirements, feasibility analysis, and a cost-benefit analysis.
- The following portions of DoD Manual 8320.1-M-1 (for new development or more than 30% redesign):
  - Search the Defense Data Dictionary System (DDDS) for applicable data elements as development work takes place.
  - Create new standard data elements in accordance with DoDD 8320.1 and AFI 33-110 if appropriate data elements are not found in the DDDS.
  - Submit newly created data elements through appropriate channels for approval and inclusion in the DDDS.

5.1.1:2.6 Provide contractor-furnished management information systems and procedures to support the functional requirements listed below. Data, hardware, and software shall be protected from unauthorized access in accordance with AFI 33-202 paragraphs 1.4, 3.1 and 3.10 and OSD Policy Memorandum on NIPRNet Internet Connectivity (August 22, 1999). The list of hardware available as GFE at the beginning of the contract is shown in Appendix 5.1.1-1. Ensure access to and use of all historical data currently in AEDC information systems including data retention as outlined in Table 5.1.1-2. Ensure continuity of AEDC operations (automated processes and data availability) beyond this contract. Provide an efficient integrated user interface to automated systems for data input and retrieval, password management, and data flow between new and legacy systems. Functional requirements include:

- Financial management to meet requirements stated in PWS 6.1. Ensure the flow of needed information to and from Air Force financial systems JOCAS II and GAFS/BQ;
- Maintenance management (computerized maintenance management system), including work management and asset management of all AEDC assets (including configuration management, asset health and health monitoring, assessment of capability, reliability, maintainability, availability, and backlog of maintenance and repair);
- Property and inventory management to meet requirements of PWS 4.5.1 and 6.1;
- Supply and purchasing, including vendor rating, to meet requirements of PWS 4.5.1;
- Project management, including project plan/statement of capability development, scheduling, resource allocation, and monthly earned value reporting;
- CAD/CAM/CAE, drawing management, and document management to meet requirements stated in PWS 4.2.1 and 4.3.1. Note: The contractor must ensure integration with Air Force GeoBase products and services;
- Test facility scheduling in support of the AEDC Consolidated Scheduling Process, PWS 3.1:2.2;
- Executive management, including key management metrics, financial status, project status, and contract status;
- Test planning and management system;
- Data archival and retrieval, including mandatory retention of records, and efficient operation of management information systems;
- Communications - Computer System Requirements Document (CSRD) tracking;

- Miscellaneous information, including personnel locator, on-line telephone directory, and (door) key management.

5.1.1:2.6.1 Provide company internal management information systems required for contractor performance. Examples of this type of software include human resources, and management functions. Specific examples include a pension system, general ledger, and accounts receivable.

Table 5.1.1-2 Data Retention Requirements

Type of Data	Retention Requirement
Financial	7 years from the end of the fiscal year in which the record is created
Maintenance	7 years from the end of the fiscal year in which the record is created
Property	2 years beyond contract closeout
Supply/Purchasing	7 years from the end of the fiscal year in which the record is created
Project Management	2 years from the end of the fiscal year in which the project is closed
CSRDs	2 years from record creation

5.1.1:2.7 Administer an Information Assurance (IA) program for all AEDC (including tenants) communications and computer systems. Identify a point-of-contact for each of the four IA programs below.

- Administer an AEDC-wide Computer Security (COMPUSEC) program in accordance with AFPD 33-2, AFI 33-202, and AFI 33-115 Vol. 1.
  - Implement and track status of all security bulletins.
  - Inspect all areas at AEDC for compliance with IA policy and accomplish corrective action.
  - Prepare Certification and Accreditation packages in accordance with DOD 8510.1-M Appendix 1 and supplemental information identified in AFI 33-202, Paragraph 4.3.1.1. (OT-2003-30027)
  - Provide status updates. (DI-MGMT-80368)
- Administer an AEDC-wide Emissions Security (EMSEC) program in accordance with AFI 33-203.
  - Complete EMSEC Countermeasure Assessments. (DI EMCS-80217A)
  - Coordinate with Air Force and tenant unit EMSEC points of contact on the design of facilities that may house equipment used to process classified information.
- Administer an AEDC-wide IA Awareness program in accordance with AFI 33-204.

- Administer an AEDC-wide Communications Security (COMSEC) program in accordance with AFKAG-1 and AFKAG-2.
  - Operate and maintain all equipment, systems, and material needed to support COMSEC accounts and secure circuits, including secure telephone units and secure facsimile units. Issue operational codes, authenticators, and call signal lists.
  - Provide on-call support for COMSEC emergencies that occur outside normal duty hours.
  - Provide COMSEC Account services for the Certificate Authority Workstation (CAW). This includes at least one primary and one alternate Certificate Authority (CA) and one primary and one alternate System Administrator (SA) and Information System Security Officer (ISSO) for the operation of the CAW. All personnel must attend formal Air Force Certificate Authority training prior to operating the CAW.

5.1.1:2.8 Centrally manage all end-user computing devices.

- Support the Government in requirements definition and prioritization.
- Maintain and disseminate a list of supported office automation software and hardware.
- Provide installation and maintenance for end-user computing devices and supported software.
- Provide installation and maintenance service priority to:
  - AEDC Command Section
  - AEDC Classified Defense Message System (DMS) Center
  - AEDC Command Post
  - Operations Center
  - Battle Staff, when convened
  - AEDC Test & Evaluation Mission
- Audit each end-user computing device annually to ensure conformance with copyright law.
- Maintain communication-computer system configuration management records in the Air Force Remedy ARS trouble ticketing system.

5.1.1:2.9 Provide Defense Message System (DMS) service and administrative communications support.

- Operate the Classified DMS Communications Center (CDCC).
- Notify the NCC Help Desk and the Government of outages and report status of out-of-service equipment.
- Maintain separate Traffic Service Stations for unclassified and classified message traffic.
- Maintain and monitor classified mailboxes for all DMS classified users 24 hours/day, 7 days/week, except when the Central Computing Facility is shut down.
- Provide required training for DMS users.

5.1.1:2.10 Provide IT training for contractor and government personnel. Operate and maintain the computer training center

5.1.1:3 DIRECTIVES:

5.1.1:3.1 Mandatory:

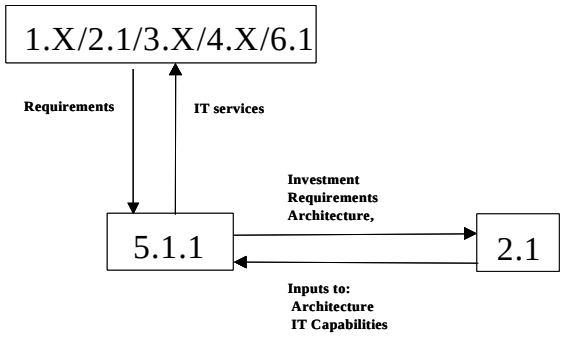
DoD 5200.2-R	Personnel Security Program, para. 3-614 and Appendix K
DoD 5200.33-R	Defense Courier Service Regulation
DoD 8510.1-M	DoD Information Technology Security Certification and Accreditation Process (DITSCAP)
AFPD 33-2	Information Protection, 1 Dec 1996.
AFI 33-104	Base Level Planning and Implementation
AFI 33-113	Managing Air Force Messaging Center, 20 May 03
AFI 33-115 V1	Network Operations, 3 May 2004
AFI 33-115 V2	Licensing Network Users and Certifying Network Professionals, 14 April 2004
AFI 33-119	Air Force Messaging, 24 Jan 2005
AFI 33-129	Web Management and Internet Use, 4 April 2001 and AFMC Sup
AFI 33-137	Posts, Protocols, and Services Management, 7 Jan 2005
AFI 33-138	Enterprise Network Operations Notification and Tracking, 7 Dec 2004
AFI 33-201	Communications Security, 1 Aug 2000
AFI 33-202	Network and Computer Security, 17 June 2004 and AFMC Supp
AFI 33-203	Emission Security, 26 Sep 2002
AFI 33-204	Information Assurance (IA) Awareness Program, 1 April 2004 and AFMC Sup.
AFI 33-205	Air Force Information Protection Metrics and Measurements Program, 1 Aug 97.
AFI 33-206	Air Force Specialized Information Protection Publications, 21 Nov 2003
AFI 33-207	Computer Security Assistance Program, 1 Sep 97.
AFI 33-209	Operational Instruction for the Secure Telephone Unit (STU- III) Type 1, 1 FEB 98
AFI 33-210	Cryptographic Access Program, 19 May 2000
AFI 33-211	Communications Security (COMSEC) user Requirements, 3 June 2004
AFI 33-212	Reporting COMSEC Deviations, 24 Jan 2003
AFI 33-215	Controlling Authorities for COMSEC Key Material (KEYMAT), 1 Jan 98
AFI 33-216	Management of Manual Cryptosystems, 1 Nov 97
AFI 33-219	Telecommunications Monitoring and Assessment Program (TMAP), 23 May 2002
AFI 33-230	Information Protection Assessment and Assistance Program, 4 Aug 2004
AFI 33-275	Controlled Cryptographic Items, 16 Sep 2002
AFMAN 33-214 V1 (S)	Emission Security Assessments, 21 Sep 2001
AFMAN 33-214 V2	Emission Security Countermeasure Reviews, 21 Sep 2001
AFMAN 33-221	Communications Security: Protected Distribution Systems (PDS), 14 Apr 2004
AFMAN 33-223	Identification & Authentication, 19 Jul 2004 and AFMC Sup.

AFSSI-3013	Operational Instruction for Trunk Encryption Devices (TEDS); KG-81, KG-94 Family, KG-95 Family, & KG-194 Family in Stand Alone Applications, 17 Apr 2001
AFSSI-3014	Operational Instruction for the Motorola Network Encryption System (NES), 23 Jul 2003
AFSSI-3021	Operational Security Instruction for the AN/CYZ-10/10A Data Transfer Device (DTD), 23 Jul 2003
AFSSI-3031	Operational system Security Instruction for the Local Management Device/Key Processor (LMD/KP) (KOK-22), 23 Jul 2004
AFSSI-5009	Information Protection (IP) Interim Toolset
AFSSI 5020	Remanence Security, 20 Aug 96.
AFKAG-1	AF Communications Security (COMSEC) Operations
AFKAG-2	AF Accounting Manual
AFKAG-19	Secure telephone Unit III (STU-III) & Secure Data Network System (SDNS) user Representative and COMSEC Accounting Procedures, 30 Jun 95
AFI 33-202	AFMC Sup 1
AEDC COI 33-3	AEDC Information System Hardware/Software Certificate to Operate

5.1.1:3.2 Guidance:

JANAP 128J	Automatic Digital Network (AUTODIN) – Operating Procedures
JANAP 201M	Status of Non-Cryptographic JANAPS and ACPs (Confidential)
Public Law 100-235	The Computer Security Act of 1987.
OMB Circular A-130	Management of Federal Information Resources, 8 Feb 96.
DoDD 8320.1	Data Administration
DoDD 8500.1	Information Assurance
DoDI 8500.2	Information Assurance (IA) Implementation
AFI 21-404	Developing and Maintaining Communications and Information Systems Installation Records
AFI 33-103	Requirements Development and Processing
AFI 33-108	Compatibility Interoperability and Integration of Command, Control, Communications, and Computer (C4) Systems
AFI 33-110	Data Administration Program
AFI 33-111	Telephone Systems Management
AFI 33-112	Computer System Management
AFI 33-114	Software Management
AFI 33-117	Visual Information Management
AFI 33-133	Joint Technical Architecture – Air Force
AFI 33-322	Records Management Program

5.1.1:4 PRINCIPAL RELATIONSHIPS: This effort supports all personnel and mission areas. The contractor must work with AEDC STINFO when sharing information on AEDC information technology or data with citizens of foreign countries, for example, when making a presentation at a conference that includes international attendees.



5.1.1:5 STANDARDS OF PERFORMANCE:

Figure 5.1.1-1 SERVICE DELIVERY SUMMARY
Information Technology

Performance Objective	PWS Paragraph	Performance Expectation
Timely and complete IT planning.	5.1.1:2.1	Required plans submitted by request date and meet DID requirements.
Effective planning, execution and documentation of projects.	5.1.1:2.1	EVM assessments are timely and accurately reflect status. Asset documentation reflects actual configuration upon completion of project. Cost and schedule variances are within limits.
Effective coordination of planned system outages.	5.1.1:2.2	100% of outages coordinated.
Orderly recovery of systems.	5.1.1:2.2	25% of all disaster recovery plans tested per quarter and deficiencies corrected within 30 days.
No avoidable outages.	5.1.1:2.2	No more than 2 avoidable outages per quarter. No lost test time attributed to avoidable outages.
Validation of network restoration plans	5.1.1:2.3	Each plan tested at least once per six month award fee period and deficiencies corrected within 30 days.
Reliable networks.	5.1.1:2.3	Network available 99.6% of the time. No lost test time attributed to networks.
Timely response to and resolution of computer hardware and software trouble calls.	5.1.1:2.3	Priority calls: Respond within 30 minutes during normal duty hours, or 1 hour after normal duty hours, 90 percent of the time, mean time to resolve of 5.5 hours. Routine calls: Respond to all calls within 2 days 95 percent of the time, mean time to resolve of 5.5 hours.
Reliable Computer Systems.	5.1.1:2.4	Computer systems available 98.5% of the time. No lost test time attributed to computers.
Effective application of software engineering practices.	5.1.1:2.5	95% of non-compliant CMMI processes corrected within 30 days after audits.
Responsive MIS that facilitates timely management decisions.	5.1.1:2.6	5.5 or greater customer satisfaction rating on a 1 – 6 Likert scale with statistically significant data.

Performance Objective	PWS Paragraph	Performance Expectation
Effective IA Program Management.	5.1.1:2.7	Satisfactory rating on all IA Program inspections.
Secure Networks.	5.1.1:2.7	Zero Network Intrusions. 100% of systems accredited. 100% of TCNOs implemented on time.
Effective EMSEC and COMSEC Management.	5.1.1:2.7	Satisfactory rating on all inspections.
Timely installation of personal computers.	5.1.1:2.8	95% of PCs installed on schedule.
Reliable Defense Messaging Systems.	5.1.1:2.9	99.6% availability.
Effective IT training	5.1.1:2.10	5.5 or greater customer satisfaction rating on a 1 – 6 Likert scale with statistically significant data.

5.1.2 INFORMATION MANAGEMENT

5.1.2:1 SCOPE: This PWS element produces and distributes AEDC information.

5.1.2:1.1 Annually, the approximate publication effort:

- Edits and publishes 200 procedures and 250 bulletins.
- Orders and distributes 500 technical orders and documents.
- Provides storage for 15,000 boxes of records.
- Maintains a 700-entry forms index.

5.1.2:1.2 Visual Information (VI) involves approximately 800 still/motion video assignments, 4500 electronic scans, processing 135,000 feet of 16mm film, 7,500 sheets of prints (conventional and electronic), and processing and the filing of 800 rolls of negative film. The contractor also supports 3 to 4 video or multimedia presentations each year. Graphic Arts produces 100 illustrations, 120 presentations, 150 ceremonies and special events, 200 displays/posters, and 350 miscellaneous support items. The contractor maintains the projection equipment and conference rooms for the AEDC Commander and his staff and supports an average of 100 multi-media briefings each year, and an average of 100 additional multi-media briefings. The contractor supports 150 equipment loans for presentations and conferences each year and works with the customers to ensure all briefings and presentations are scheduled and supported.

5.1.2:1.3 Office machine repair maintains 254 typewriters, 524 calculators, 90 copiers, and 688 miscellaneous machines (faxes, reader-printers, Lektrievers, cash registers, and others).
Work is required to publish and distribute Center-wide documents, control and distribute technical orders, control and provide local forms, provide visual services, and to maintain office machines.

5.1.2:1.4 The AEDC Technical Library serves the entire work force to meet essential administrative, technical, and scientific information needs. The current document collection includes:

- Approximately 21,000 nonfiction books, 114,000 technical reports and documents, 600 serials, 280,000 microforms, and 400 audio-visual items, and 9,000 bound journal volumes.
- Annual levels for circulation of library materials include approximately 4,000 nonfiction books, 1,000 technical reports and documents, 66,000 serials and newspapers, and 800 microforms.
- Annual book and non-book circulation is approximately 72,000. Additional services include researching 500 reference inquiries, and conducting 800 inter-library loan actions.
- The library subscribes to five on-line reference services, 20 networked CD-ROM products, five stand-alone CD-ROM products, and two electronic journals.

5.1.2:1.5 The Technical Publications responsibility serves the entire AEDC work force to edit and produce scientific and technical information reports and services. The technical publication effort covers only the cost of editing and production of final reproducible copies or CDs. The number of reports published annually is approximately 6 Technical Reports, 25 Test Summary Reports, 50 Technical Papers, and approximately 150 other documents (test capability brochures, Test Facility Handbook updates, briefings, presentations, etc.)

5.1.2:2 REQUIREMENTS: The contractor shall:

- Publish and distribute management publications and local Air Force publications such as Safety Standards, Center Operating Instructions, and AEDC administrative bulletins.
- Operate records management and forms management programs.
- Provide visual information support to include photography, graphic arts, illustrations, digital imaging, presentations, video productions, and audio/visual.
- Provide office machine management and repair.

5.1.2:2.1 Produce and distribute management publications and local Air Force forms. Provide the economical production and dissemination of publications:

- Control production of AEDC publications by ensuring appropriate coordination, review, and approval. Maintain an official record set to meet historical and legal requirements. Make publications available in either electronic or paper form.
- Maintain local distribution procedures.

5.1.2:2.2 Distribute technical orders (TO) in accordance with TO 00-5-1 and TO 00-5-2.

5.1.2:2.3 Maintain a contractor records management program and provide guidance on records management in accordance with Federal Acquisition Regulations and AFI 33-322. Include all Government records maintained by the contractor.

- Identify all categories of records being created and establish definite retention periods. The process must reflect the lowest organizational level that creates or receives records. Retention periods must conform to the Federal Acquisition Regulation and USAF Records Management directives.
- Provide guidance and training to offices to ensure records are arranged and maintained in accordance with the approved plan.
- Maintain records disposition manuals. Establish safeguards against the illegal or unauthorized disclosure, removal, loss, or destruction of records.
- Operate a records storage area for all inactive records. Eligible Government records shall be shipped to Federal Records Centers. The Contractor may establish a schedule for records retrieval.
- Assist users in establishing standardized electronic records-keeping systems.
- Ensure proper protection of sensitive but unclassified information, including:
  - Protecting the integrity and accuracy of privileged and sensitive information;
  - Identifying data storage devices/media containing Privacy Act or For Official Use Only material;
  - Labeling and password protecting electronic folders containing such information.

5.1.2:2.4 Provide forms management products and services in accordance with AFI 33-360V2.

- Control the creation of forms to ensure established forms are used whenever possible and required records are maintained.
  - Provide forms analysis and design services.
  - Designate all locally created forms as either AEDC forms (if an Air Force office is Office of Primary Responsibility (OPR)) or Government Contractor (GC) forms (if a Contractor office is OPR).
  - Maintain a current forms index to include listing of the OPR, and list of obsolete or superseded forms.
  - Provide either electronic or paper versions of forms

- Simplify the collection of information or data by combining or eliminating forms or formats.

5.1.2:2.5 Provide Visual Information (VI) resources, products, and services.

- Plan for future requirements, considering new techniques and new technologies.
- Use digital photography unless specifically required to use film. Perform film processing when specifically requested by the customer or required by directive.
  - Collect precious metals from photographic films and chemicals, and comply with environmental regulations for the handling, neutralizing, and disposal of industrial waste material.
- Provide studio photography for portraits, full-length special duty assignments, and passports. Provide official Air Force portraits in accordance with AFI 36-2632 sections 4.3.1, 4.3.2, and 4.3.5.
- Provide 16mm motion picture, 70mm sequential, and videotape photographic services, to include the exposure, processing, and printing of such media.
- Perform complete motion picture and video editorial and advisory services.
- Provide 24 hour/day, 7-day/week on-call photographic and videographic services.
- Maintain a library of photographic negatives. Provide retrieval of negatives by all of the following: number, date, project, or title.
- Provide artistic expertise in graphic arts and visual aid development. Recommend format, prepare copy, captions, artwork and layout.
- Support the printing of special publications, handouts, brochures, guides, and directories as directed. (The Defense Automation and Production Service (DAPS) performs actual printing).
- Establish and implement an image library with the ability to send and receive digitized images over AEDC computer networks.
- Operate the presentation equipment in the A&E Conference Room and the Main Auditorium when requested.
- Manage and maintain photographic equipment.

5.1.2:2.6 Maintain and repair copiers and office machines.

- Manage AEDC copiers.
  - Recommend the placement and replacement of copiers, using TO 46A-1-1 as guidance.
  - Maintain copier production data per DOD 5010-12-L.
  - Establish and execute a preventive maintenance schedule.
- Manage office machine replacements, using TO 46A-1-1 as guidance.

5.1.2:2.7 Operate and maintain the technical library.

- Account for and track library materials and assets, including restricted access documents.
- Acquire publications, materials, and services by loan, exchange, or purchase.
  - Purchases through the Air Force Library Central Procurement System will be in compliance with the Air Force Library Central Procurement Procedures Manual (unnumbered).
- Prepare Annual Library Report according to instructions in AFI 34-270. (OT-2003-30035)
- Provide archival support to the AEDC History Office.

5.1.2:2.8 Publish technical documents.

- Edit reports and papers to ensure accuracy, clarity, and quality of wording, format, arrangement of material, illustrative material, and typing. Technical accuracy is the responsibility of the author of the document.
- Prepare, assign report numbers, produce, and distribute Technical Reports, Test Summary Reports and Technical Papers as directed and in conformance with ANSI Z39.18-1995.
- As applicable, place a distribution statement on the cover of all documents in the DD Form 298, Block 12a. The Government Scientific and Technical Information Officer (STINFO) will designate the type of statement.

5.1.2:3 DIRECTIVES:

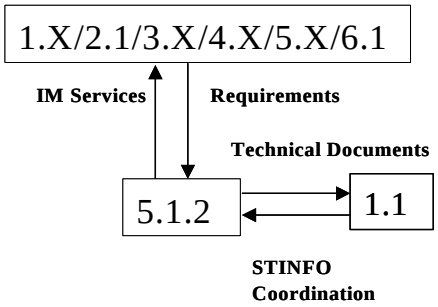
5.1.2:3.1 Mandatory:

AFI 33-322	Records Management Program
AFI 33-360V1	Publications Management Program
AFI 33-360V2	Forms Management Program
AFI 36-2632	Official Photographs of Air Force General Officers
AFMAN 37-139	Records Disposition Schedule
TO 00-5-1	Air Force Technical Order System
TO 00-5-2	Technical Order Distribution System
ANSI Z39.18-1995	Scientific and Technical Reports – Elements, Organization, and Design

5.1.2:3.2 Guidance:

GSA/NARS	Forms Analysis and Design Handbook
AFI 33-117	Visual Information (VI) Management
AFI 33-324	The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections
AFI 33-332	Air Force Privacy Act Program
AFI 34-270	Air Force Library and Information System (AFLIS)
AFI 37-138	Records Disposition-Procedures and Responsibilities
AFMAN 37-123	Management of Records
AFPD 21-3	Technical Orders
TO 46A-1-1	Maintenance and Replacement of Office Appliances.
AEDC Technical Publication Manual	

5.1.2:4 PRINCIPAL RELATIONSHIPS: Interface with all Air Force and contractor offices and external AEDC customers. Coordinate and interface with program managers, and Public Affairs. Technical publications personnel must coordinate preparation of technical documents with the author and with the AEDC Scientific and Technical Information Office (STINFO), ensuring the final report is prepared and distributed within the given guidelines, timeframes, and security constraints. Library personnel must coordinate with STINFO for distribution of technical documents.



5.1.2:5 STANDARDS OF PERFORMANCE:

Figure 5.1.2-1 SERVICE DELIVERY SUMMARY
Information Management

Performance Objective	PWS Paragraph	Performance Expectation
Timely distribution of Center-wide management publications and Air Force publications.	5.1.2:2.1	Documents distributed within 2 working days of receipt 95 percent of the time.
Timely processing of requests for TOs.	5.1.2:2.2	Requisitions for TO submitted within one working day of customer request and delivered within one day of receipt 95 percent of time.
Effective management of stored records.	5.1.2:2.3	No improper disclosure, loss or destruction of stored records.
Timely access to locally created forms.	5.1.2:2.4	Forms available 95 percent of time (electronic or paper).
Timely completions of visual information service customer work requests.	5.1.2:2.5	Work completed by customer request date 95 percent of the time.

Performance Objective	PWS Paragraph	Performance Expectation
Timely copier repairs.	5.1.2:2.6	Repairs completed within one working day of the repair request 95 percent of the time.
Timely completion of Annual Library Report in required format.	5.1.2:2.7	Annual report properly prepared and submitted by request date.
Effective management of restricted access documents.	5.1.2:2.7	No improper disclosures
Timely completion of technical documents.	5.1.2:2.8	95 percent by request date.

5.1.3 COMMUNICATIONS

5.1.3:1 SCOPE: This PWS element includes all management, maintenance, and repair of AEDC's communications systems. These include video teleconference (VTC) systems, fixed and cellular telephones, radios, pagers, satellite systems, and cable television.

5.1.3:1.1 The main telephone switch is capable of accessing the inter-exchange trunks (Direct In Dial and Direct Out Dial), Defense Switched Network (DSN) circuits, FTS-2001 circuits, and 1-800 circuits. It has a total capacity of 7500 subscribers. Approximately 4850 lines are currently assigned. A switchboard operator is required to connect some incoming commercial calls and to place some outgoing commercial calls.

5.1.3:1.2 Radio, pager, satellite, and other systems managed include: Land Mobile Radio (LMR) networks with approximately 1000 radios, satellite ground station uplink and downlink, Central Base Pager system, Air Technology Network (ATN) audio-visual satellite system, National Technological University (NTU) audio-visual satellite system, Lightning Detection and Location System, base fiber-optic video communications network, trunked LMR System Operations, cellular phone services and equipment with approximately 50 leased cellular phones, base, regional and nationwide paging services and equipment with approximately 500 base pagers and 100 leased pagers, Commander's (television) channel, Disaster Warning Siren System, and closed circuit television (CCTV).

5.1.3:1.3 AEDC operates two VTC rooms. Approximately 15% of videoconferences involve classified information.

5.1.3:1.4 The cable television (CATV) serves: Military Family Housing, Wingo Inn, Fire, Police and Communications Building, Operations Center, and other primary Mission Area locations. Operations may require working flexible hours (split shifts, etc.) to correct various problems with the CATV systems.

5.1.3:2 REQUIREMENTS: The contractor shall operate and maintain the Arnold AFB telephone system, video teleconferencing facilities, and cable television system. The contractor shall manage personal wireless communications systems and provide audio-visual support. Report communications system outages to the Operations Center.

5.1.3:2.1 Provide AEDC telephone services.

- Operate and maintain two telephone switches and Intelligent Peripheral Equipment. The telephone switch manufacturer shall certify maintenance personnel.
- Publish the Arnold AFB telephone directory in accordance with AFI 33-111, and AFMC Supplement to AFI 33-111. (DI-MISC-80422)
- Operate and maintain the Telephone Management System (TMS) software and the following databases:
  - Directory updates
  - Directory maintenance
  - Telephone directory generation
  - Records maintenance
  - Telephone directory generation
  - Records maintenance
  - Circuit records

  - Line records
  - Cable records
  - Carrier records
  - Trouble reporting & trouble ticket processing
  - Inventory maintenance
  - Subscriber line maintenance
  - Switch inventory system
  - Work order processor
  - Telephone billing and verification
- Maintain the Base Communications Service Authorization (CSA). Validate bills against the CSA and Customer Service Record (CSR) monthly. Submit changes if required via AF Form 1218, to 38th Engineering & Installation Group, Tinker AFB OK. Submit vouchers for payment.
- Compile monthly data for CSAs, telephone work orders, long distance toll call verifications, cellular telephones, and vouchers for payment of communications invoices accompanied by certified schedules of charges, to support long distance toll charges. Establish procedures to obtain payment for cost incurred for non-official calls. Establish a rate structure and procedure for a fee-for-service program.
- Maintain, install, and remove switches, trunks, outside cable plant (fiber optic and twisted pair copper), house wiring, and terminal equipment. Notify the Government when fill rate of outside cable plant exceeds 75%.
- Maintain charges and provide monthly cost analysis for voice and data circuits. (OT-2003-30111)
- Provide telephone operator services from 7:30 AM to 4:00 PM, Monday through Friday.
- Conduct and document traffic studies, including cost/benefit analyses, of both hardware and software in developing overall telecommunications system requirements.
- Complete work orders by agreed date. For those work orders that cannot be completed on time, report to the Government the estimated completion date and required actions to complete work order.
- Provide telephone maintenance service from 7:00 AM to 4:00 PM Monday through Friday.
- Report all telephone cable plant and switch outages to the Network Control Center Help Desk.
- Prepare Telecommunications Service Requests (TSRs) for interstate and long distance services in accordance with DISA 310-65-1, DISA 310-130-1, and DISA Direct procedures. (see AFI 33-116).
- Maintain all Long Haul Telecommunications Circuit Folders in accordance with AFI 33-111 and AFI 33-116.
- Manage the Telephone Control Officer program in accordance with AFI 33-111.

5.1.3:2.2 Provide personal wireless communications services (PWCS) support.

- Analyze and evaluate all organizational PWCS requirements using the appropriate PWCS decision matrix contained in AFI 33-106.
- Maintain, annually review, and revalidate a PWCS five-year replacement plan. Make the plan available to using organizations to aid them with their budget decisions. (OT-2003-30030)
- Install and manage the Base radio trunking system. Provide for changing trunking talk-groups, priorities, and special talk paths. Develop a contingency plan for reassigning talk-groups and priorities in the event of a disaster.

- Install and perform reactive and preventive maintenance for personal wireless communications services, to include operational checks and maintenance of antenna systems, cable, grounding grids, lightning protection systems, and other ancillary equipment.
- Maintain radio equipment inventory using Government-furnished Tracking and Reporting Software (TRS).
- Manage cellular telephones and leased pagers.
- Manage and repair radios supporting airfield operations.
- Perform all duties of the Installation Spectrum Manager a defined in AFI 33-118. Manage and maintain all radio frequency services, including configuration control and developing frequency requests. Establish and maintain agreements with local and state emergency agencies to use their radio frequencies during emergencies.
- Manage, install, and maintain:
- Electronic security devices (including cipher locks).
- Audio-visual equipment.
- Public address systems.
- Closed circuit TV systems.
- Electronic marquees.
- Security Police duress alarm system and radar speed guns.
- Disaster Preparedness warning siren system, including hard wired and RF systems and associated end equipment.
- Fire detection and reporting devices.
- Photo lab processors.
- The weather station for the Center Information Channel.
- Lightning detection system.
- Report communication outages, except for individual end user devices, to the Government.

5.1.3:2.3 Operate and maintain video teleconference facilities and equipment.

- Schedule all uses of the VTC in accordance with priorities established by the Government.
- Familiarize customers of the VTC in ongoing practices of operations, proper equipment operations, timing of conferences, and other aspects as needed to accomplish the conference.
- Maintain operating procedures, training materials, and other documents as required.
- Maintain the capability to conduct classified video teleconferences.
- Maintain records to document the operations of the VTC.

5.1.3:2.4 Provide cable television support services in accordance with the guidance in AFI 64-101.

- Maintain Television Receive-Only satellite systems, over-the-air antennas, and associated equipment that supply signals to the CATV system and the distance learning system.
- Install and maintain all CATV drops. Install new CATV drops when authorized by the Air Force Multimedia Manager.

- Monitor the number of CATV drops to provide accountability for monthly payment of this service.

5.1.3:2.5 Provide a process for recalling communications system maintenance personnel outside of normal duty hours. Ensure maintenance personnel will be on-site at AEDC within an hour of the first contact attempt.

5.1.3:3 DIRECTIVES:

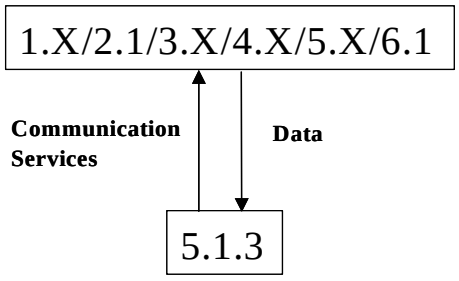
5.1.3:3.1 Mandatory:

DISA 310-65-1	Circuit and Trunk File Data Elements and Codes
DISA 310-130-1	Submission of Telecommunications – Services Requests
ACP 134	Telephone Switchboard Operating Procedures
AFI 33-111	Telephone System Management
AFI 33-106	Managing High Frequency Radios, Personal Wireless Communications Systems, and the Military Affiliate Radio System (MARS)
AFI 33-116	Long-Haul Telecommunications Management
AFI 33-118	Radio Frequency Spectrum Management

5.1.3:3.2 Guidance:

ACP 125	Communications Instruction, Radio-Telephone Procedures
ACP 167	Glossary of Communications Electronics Terms
AFI 33-103	Requirements Development and Processing
AFI 33-117	Visual Information (VI) Management
AFI 64-101	Cable Television Systems on Air Force Bases
AFMAN 33-120	Radio Frequency (RF) Spectrum Management
MIL-STD-461E	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment

5.1.3:4 PRINCIPAL RELATIONSHIPS: The contractor must coordinate with counterparts at HQ AFMC for VTC scheduling. Maintain a COMSEC account in support of classified Video Teleconferencing. The frequency manager must maintain a relationship with the Air Force Frequency Management Agency.



5.1.3:5 STANDARDS OF PERFORMANCE:

Figure 5.1.3-1 SERVICE DELIVERY SUMMARY
Communications Operations

Performance Objective	PWS Paragraph	Performance Expectation
Reliable Telephone Service.	5.1.3:2.1	99.99% available and operational.
Timely completion of telephone work orders.	5.1.3:2.1	95% are completed by agreed date.
Timely resolution of telephone trouble calls.	5.1.3:2.1	95% resolution within one workday.
Reliable Land Mobile Radio Service.	5.1.3:2.2	99.99% available and operational.
Available VTC Service.	5.1.3:2.3	VTC systems are operational and available for scheduled VTCs 98.5% of time during normal operating hours.
Timely response to CATV trouble calls.	5.1.3:2.4	Respond within 1 hour 90% of the time.

5.1.4 POSTAL SERVICES AND MAIL DISTRIBUTION

5.1.4:1 SCOPE: This PWS element includes all work required to provide mail pickup and delivery and other postal services. The contractor handles approximately 55,000 pieces of U.S. Postal Service and base mail per month, and conducts about $6,500 of metered and stamp sales per month.

5.1.4:2 REQUIREMENTS: The Contractor shall:

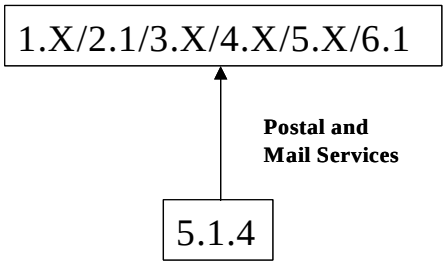
- Operate the AEDC Post Office in accordance with United States Postal Service (USPS) Directives, including the Domestic Mail Manual, DOD 4525.8, DOD Official Mail Management, and DOD 4525.8-M/AF Supplement, Official Mail Manual.
- Safeguard Air Force mail metering equipment. Maintain a daily record of ascending and descending meter readings.
- Provide registration, certification, and insurance services. Sell postal supplies.
- Process accountable mail as classified. Notify addressees of incoming accountable mail. Provide registration for all accountable mail.
- Provide daily distribution services to authorized activities, except weekends and holidays.
- Pick up and deliver mail daily to the Post Office, Tullahoma, Tennessee.
- Provide quarterly postage reports and monthly reports of Air Force and DoD tenant unit postage usage. (OT-2003-30113) (OT-2003-30114)
- Pass an annual USPS audit, both for money and stock.
- Provide Base Information Transfer Center (BITC) services:

5.1.4:3 DIRECTIVES:

5.1.4:3.1 Mandatory:
DOD 4525.8 DOD Official Mail Management
Air Force DOD 4525.8-M/AF Supplement, Official Mail Manual United States Postal Service Domestic Mail Manual

5.1.4:3.2 Guidance: None

5.1.4:4 PRINCIPAL RELATIONSHIPS: The Tullahoma Post Office provides services and information that assist the contractor in meeting AEDC's postal services requirements. This effort interfaces with all personnel and organizations at AEDC.



5.1.4:5 STANDARDS OF PERFORMANCE:

Figure 5.1.4-1 SERVICE DELIVERY SUMMARY
Postal Services and Mail Distribution

Performance Objective	PWS Paragraph	Performance Expectation
Effective Postal Service Operations – Compliance with DODI 4525.8 and United States Postal Service Directives.	5.1.4:2	Satisfactory rating on all AEDC Official Mail Manager and Higher Headquarters inspections.

6.1 CONTRACT MANAGEMENT

6.1:1 SCOPE: This PWS element involves all elements of contract operations, management, and select support functions. The principle objective of this PWS is to ensure proactive and sustained contract excellence in providing accurate, safe, secure, timely, and efficient contract test and mission support to meet the Government's established requirements.

6.1:2 REQUIREMENTS: The Contractor shall designate and locate at AEDC a responsible corporate official with no responsibility other than for this contract and empowered to make and implement all decisions regarding the performance of this contract. This official shall have independent authority for all contract matters and provide for:

- Performance management
- Business management
- Process management

6.1:2.1 PERFORMANCE MANAGEMENT: Apply a qualified and experienced management team focused on proactively integrating and optimizing across all PWS elements to ensure performance. Develop a relationship with the Government built on open, honest communication and focused on the best interest of AEDC and its mission. Verify and measure performance to ensure delivery of proposed results, support management and decision-making, facilitate communications, and motivate high performance through use of key performance measures.

6.1:2.1.1 PWS integration.

- Ensure integration across all PWS elements.
  - Integrate contract strategic and tactical planning.

6.1:2.1.2 Results management.

- Measure and validate results accounting for fluctuating workloads.
- Respond to performance improvement and emphasis areas and measure effectiveness of response actions.
- Maintain a centralized web-based reporting system of performance measures in support of the performance management process.
  - Coordinate among functional areas and the Government to ensure effective performance evaluation.

6.1:2.1.3 Collaboration, communication, and coordination.

- Clearly communicate AEDC and contract priorities.
- Ensure all contracted staff actively collaborate, communicate, and coordinate with each other and their Government counterparts.
- Ensure information exchanges are timely, thorough and accurate.

6.1:2.1.4 Foreign Disclosure

The contractor must comply with United States laws and regulations concerning export of defense articles, defense services, and technical data, including the International Traffic in Arms Regulation (ITAR), 22 CFR 120-130. The contractor shall notify the contracting officer prior to engaging in direct discussions with foreign nationals or engaging in other actions which would constitute an export as described in the ITAR.

6.1:2.2 BUSINESS MANAGEMENT: Steward resources in the spirit of public service. Identify needs and tactics to optimize efforts and deliver PWS elements on time and within resource constraints. Inform and educate stakeholders, customers, and the public regarding AEDC's value, and comply with contract terms and conditions.

6.1:2.2.1 Organizational Conflict Of Interest (OCI) Management

- Continuously identify real or potential OCIs that may be encountered during the performance of this contract.
- Aggressively manage and administer a comprehensive OCI mitigation plan for all real or potential OCIs.

6.1:2.2.2 Contract Administration

- Develop proposals and negotiate annual workload; and supplemental contract modifications.
- Award and administer subcontracts.
- Ensure performance of the business and administrative aspects of the contract.
- Ensure resources are efficiently and effectively managed and contract status (including Government-furnished resources) is reported to Government representatives as required.
- Recommend Center Operating Instructions (COIs) as needed to assist in managing and executing this contract and to facilitate the efficient operation of AEDC.
- Develop, implement and manage formal associate contractor agreements as required.

6.1:2.2.3 Financial Management System

- Maintain an integrated financial system that will provide data on an accrual, cash, and Governmental appropriated basis for budgeting, general accounting, payroll accounting, cost accounting, cost estimating, customer billing, workload planning, analysis and reporting, contract management, and contract vouchering.
- The financial system must:
  - Interface with Air Force financial systems IAW DoD Financial Management Regulation Volume 11A, Chapter 12. The financial system must interface with the current system, JOCAS II, and have the flexibility to accommodate routine changes to this interface during the life of the contract;
  - Account for project cost consistently with the basis used in estimating the Statement of Capability or project plan and have the capability to identify and allocate all overhead and indirect cost to specific projects. The system must comply with the logic employed in the Air Force cost accounting system to preclude reconciliation differences**;**
  - Maintain financial data by specific Government fiscal year. The financial system must be able to perform job order cost accounting for AEDC to include contractor cost, cost of Government furnished equipment and materials, and any other Government cost designated by the Government;
  - Be capable of assigning cost by using standard rates;
  - Meet the system requirements for common systems prepared under direction of Joint Financial Management Improvement Program (JFMIP) as a series of publications entitled Federal Financial Management System Requirements (FFMSR).

6.1:2.2.4 Financial Data

- Provide accurate and timely financial management data and reports consistent with generally accepted accounting principles. At a minimum, the data shall consist of the following:

- Billable revenue, actual revenue, and expenditures by the key appropriation data elements (fiscal year of funds, program element code, and/or budget program activity code, as applicable, EEIC, AEDC WBS, HQ AFMC WBS, Government fiscal year, job order number, and, if the project is a reimbursable project, the reimbursable order number).
- Projects that are billable and their billable cost.
- Daily contractor labor, materials and consumable costs on all projects.
- Monthly financial system data - provided to the Government in the required JOCAS II contractor upload format no later than close of business on the third workday of the following month.
- Government furnished resources, including Government furnished equipment and Government labor, upon interface with the Government systems.
- Commitments, obligations, payables, and expenditures.
- Workload and budget data by the key appropriation data elements and the element of expense investment code (EEIC).
- Readily accessible data for the life of all appropriations (until cancellation) including all appropriations in legacy systems.

- Contractor system uploads will be provided as frequently as required by the Government using the JOCAS II contractor upload CSU format. (OT-2003-30155)

6.1:2.2.5 Financial Reports

- The reports shall consist of management reports that assist in the management of funds and the mission assigned to AEDC. At a minimum, the reports should consist of the following:
  - Monthly financial reviews on the execution status of the contract tasks.
  - Contractor invoice reconciliation reports that break down the invoice amount to specific projects and their fund cites. Reports are due with the submittal of invoices and should be provided in an electronic format to the appropriate Government personnel. The report will include the following data fields as a minimum: Fiscal year of contract, fiscal year of funds, program element code, and/or budget program activity code, as applicable, project number, current cost amount in the invoice, and the cumulative cost amount invoiced.
  - Routine management reports. (OT-2003-30156)

6.1:2.2.6 Financial Timeliness

- The following requirements are the minimum requirements for timely data:
  - Open on-line access to all financial data for authorized Government representatives designated by the Contracting Officer. Provide continuous availability to all financial reports. Reports to be updated on a daily basis.
  - During the annual closeout period, provide updated reports as required to assist the Government in managing funds appropriated to AEDC.

6.1:2.2.7 Financial Safeguard And Accuracy Of Data

- The following reports and approvals are the minimum requirements for safeguarding and assuring the accuracy of the data:
  - Maintain and annually assess the effectiveness of accounting processes and internal control procedures of both the financial system and organizational management controls. Report the results to the Government, certifying in writing that necessary measures to provide reasonable assurance have been taken. (Reference AEDC

requirement under the Federal Manager's Financial Integrity Act, as referred to in DFAS-DE 7040.1-M Chapter 5 TASK 26).
  - Submit for approval to the Government the basis of all cost allocations and rate development.

6.1:2.2.8 Earned Value Management

- Apply Earned Value Management as directed by the Government.
- Notify the appropriate Government representative of any potential or actual project deviations; using budgeted costs (BCWS) and performance of the budgeted work (BCWP) to analyze actual costs (ACWP) against initial completion estimates (BAC) and revised completion estimates (EAC or LRE).
  - BCWS – Budgeted Cost of Work Scheduled
  - BCWP – Budgeted Cost of Work Performed, i.e. earned value
  - ACWP – Actual Cost of Work Performed
  - BAC – Budget At Completion
  - EAC – Estimate At Completion or LRE – Latest Revised Estimate
- Analysis will include cost and schedule as well as completion variances and will disclose methodological approach.
- Identify and account for scope changes in addition to over/under-run differences. Identify causes and impacts, providing mitigation and/or recovery plans/options to be considered/approved by Government management.

6.1:2.2.9 Property Administration

- Establish, operate, and maintain an approved property control system that controls, protects, and maintains Government property IAW FAR 45, DFARS 245 & approved procedures.
- Schedule and perform property control audits and provide results to the Government.
- Maintain a database of all Government property to include historical property records.
- Process all off-base requests for loaned equipment in accordance with internal procedures approved by the Government.
- Designate and control storage areas for equipment and materials awaiting use.

6.1:2.2.10 Staffing

- Maintain a qualified work force able to perform the broad spectrum of functions necessary to operate, support, maintain, and improve AEDC.
  - Plan and administer a wage and salary structure, using position classification, standards, and grade levels. (OT-2003-30098)
  - Provide and administer a fringe benefit program that may include an insurance program associated with worker's compensation and employee health, vacation, sick leave, holidays, and a retirement program.
  - Maintain staffing records identifying company organizational designations, a brief description of the functions, and the number and types of personnel assigned.
  - Report personnel strength to include hiring and termination trends, number of personnel employed by pay category and organization, number of additions and deletions to the payroll. (OT-2003-30099)
  - Provide and administer an Equal Opportunity Affirmative Action Program that complies with all Federal statutes.
  - Conduct craft, supervision, and management training programs.

- Provide opportunities for graduate-level education for employees to the extent permitted by the Federal Acquisition Regulation, Part 31.
- Accept Government personnel for assignment to positions within the Contractor's organization for training or other purposes approved by the Contracting Officer.
- Coordinate joint training programs for all Contractor and Government personnel, as appropriate.

6.1:2.2.11 Center strategic planning support

- Support and participate in workshops and meetings that support the development of the AEDC Strategic Plan.

6.1:2.2.12 Public affairs support

- Execute a Center public affairs program designed to inform AEDC employees, the general public, and other critical audiences of AEDC's mission, capabilities, and accomplishments. Clear material subject to control by DoD directives through AEDC/PA prior to public release.
- Apply the principles and methods of all media technologies to promote AEDC per Government direction, including the publication and distribution of:
  - Center newspaper (Published every 2 weeks)
  - Articles for local and national distribution
  - News releases
  - Home Town News Program
    - Monthly activities forecast summary
    - Special brochures, pamphlets, fact sheets, and folders.
    - AEDC Homepage.
    - Center Annual Report.
    - Center Base Guide.
    - AEDC Daily Bulletin.
    - Responses to media inquiries
  - Maintain a historical record of news releases/clippings.
  - Escort civilian news media representatives and act as public affairs representative as required.
  - Support the Center Commander's community relations program.
  - Manage and operate AEDC's:
    - Tour and exhibit program.
    - Electronic marquees.
    - Plasma video screen.
    - Center Information Channel.
  - Support major AEDC events such as the Annual Fellows Program, Annual Awards Program, air shows, and any other commander initiatives or programs as needed.
    - Develop and execute a Center Environmental Awareness Program to inform and educate the base populace on environmental compliance and pollution prevention issues.

6.1:2.3 PROCESS MANAGEMENT. Administer and deliver tasks through a documented set of disciplined, mature and continuously improving processes with a focus on cost-efficiency, responsiveness, and consistently high-quality delivery.

6.1:2.3.1 Life-cycle management

- Use a documented, disciplined, and mature life-cycle management process for all appropriate base-wide activities.

6.1:2.3.2 Process improvement

- Ensure all contracted staff proactively suggest and institute innovative, continuous business and work process improvements to reduce cost, improve quality, and reduce cycle time.
- Identify and resolve problem areas and verify effectiveness of corrective actions.

6.1:3 DIRECTIVES:

6.1:3.1 Mandatory:

FAR 45 & DFARS 245	Government Property
DLAM 4215.1	Management of Defense-Owned Industrial Plant Equipment (IPE)

6.1:3.2 Guidance:

DOD 4161.2-M	DOD Manual for the Performance of Contractor Property Administration
AFD & AFI 35 Series	Public Affairs

Contract Property Manual, published by the National Property Management Association Executive Order No. 11246 and any Revised Order's

6.1:4 PRINCIPAL RELATIONSHIPS:

6.1:4.1 This effort applies to the management of the entire contract and must interface with each functional area as well as Government personnel. Daily liaison with the Contracting Officer and staff is normally required.

6.1:4.2 The contractor shall support and participate in integrated teams with members from other AEDC and AF organizations and other agencies and companies involved with AEDC operations. Strategic and business planning require continual interaction with the Government planning staff.

6.1:4.3 Interface with all contractor functions and AEDC personnel who have Government property assigned to them.

6.1:4.4 The Contractor shall interface with the Government to provide public affairs products that represent Center and company positions and achievements.

6.1:5 STANDARDS OF PERFORMANCE:

Figure 6.1-1 SERVICE DELIVERY SUMMARY
Contract Management

Performance Objectives	PWS Paragraph	Performance Expectation
Proactive leadership team - effective PWS integration and results management.	6.1:2.1.1,2	Delivery on proposal initiatives and proposed results; negotiated workload executed within cost and schedule commitments.
Efficient and effective collaboration, communication, and coordination.	6.1:2.1.3	Timely, accurate direction, tracking and reporting of all contract activities and resources - no surprises.
Effective foreign disclosure – ITAR compliance.	6.1:2.1.4	No violations.
Effective organizational conflict of interest (OCI) management.	6.1.2.2.1	Proactive and aggressive mitigation plan management - no violations.
Thorough contract administration.	6.1:2.2.2	Timely, accurate, and comprehensive contract actions; no deviations of contract terms and conditions; meet subcontracting goals.
Sound financial management system.	6.1:2.2.3	Full compliance with contract requirements.
Effective financial data and reports.	6.1:2.2.4 - 8	Accurate, timely, safeguarded, and consistent with generally accepted accounting principles.
Full accountability of Government property.	6.1:2.2.9	No more than 2% of Government property unaccounted for annually.
Responsive staffing.	6.1:2.2.10	Adequate number and skill mix of qualified personnel to perform the negotiated workload.
Responsive public affairs support.	6.1:2.2.12	Timely, accurate, and well-written news stories; effective response to media inquires; professional, quality outputs that enhance the view and value of AEDC to public and private entities.

Effective process management.	6.1:2.3	Tasks are delivered through documented and controlled processes – satisfactory ISO audits.

APPENDICES

APPENDIX 1.1-1 ADVANCED MISSILE SIGNATURE CENTER

The Advance Missile Signature Center (AMSC) is a national facility that integrates an archive of signatures and related data and the computer systems, tools, and staff skills necessary for cataloging, retrieving, processing, analyzing, and distributing the multiple types of data and media. The AMSC was formed in 1989 as the Plume Data Center (PDC), one of three phenomenology data centers created by the Strategic Defense Initiative Organization. As SDIO's mission evolved from strategic defense into a broader Ballistic Missile Defense Organization, the PDC evolved into the AMSC supporting BMDO and other DoD programs. Currently archived data sets include boost phase UV-VIS-IR signatures for strategic, theater, and tactical missiles, orbital propulsion systems, and plume millimeter wave attenuation data. Limited data are also available for fixed and rotary wing aircraft and drones, and for tactical missile warning system false alarm sources.

The AMSC offers a wide variety of capabilities and user services. A full time user representative and data set analysts/principal investigators are available to assist users in selecting the data that best meets their program requirements. Each data set has at least one principal investigator assigned to oversee the archival process, data evaluation/assessment, and support to users.

AMSC computer resources consist of heterogeneous computer systems connected together via a communications network. Many vendor platforms are supported to provide the user/analyst maximum flexibility in software and hardware support. The AMSC uses Hierarchical Storage Management (HSM), designed to combine multiple types of storage devices (such as disks and tapes) into a single storage system. The current system provides 1 terabyte of data online that is accessible within 45 seconds with an additional 9 terabytes available from the robotics system within 10 minutes.

Finally, the AMSC maintains a complete up-to-date suite of boost and reentry signature codes for modeling and simulation. The standard plume models take physical information about the rocket motor, trajectory, etc., and compute the combustion flow from the chamber through the nozzle and into the complete plume. Several models are available to compute the radiative transfer within the plume resulting in the simulated plume signature for any specific measurement instrument. The latest optical signature code is available for hard body and wake signatures.

APPENDIX 1.1-2 AEDC HYPERVELOCITY WIND TUNNEL (TUNNEL 9)

GENERAL DESCRIPTION:

AEDC White Oak is a geographically separated unit of AEDC that is located in White Oak, Silver Spring, MD. The principal test facility at this location is AEDC's Hypervelocity Wind Tunnel No. 9 (Tunnel 9). AEDC operates as a tenant to GSA at White Oak with GSA providing most of AEDC's site infrastructure support through a Memorandum of Agreement (MOA). The buildings and land at White Oak are the property of GSA while the facilities and equipment inside the buildings are Air Force Property.

Prior to AEDC assuming control of Tunnel 9 from the Navy, Tunnel 9 was managed and operated by an all Government workforce. Since assumption of control in 1997, AEDC has been transitioning its Tunnel 9 operations concept to that of the rest of AEDC. Today, the Tunnel 9 Government staff shares in the responsibilities for execution of the T&E effort. The planned level for FY03 is 16 Government and 19 Contractor.

Eventually, as the Government work force is reduced through attrition, the Contractor will have full responsibly for the operations and maintenance of the facility with the Government remaining in a management role. The long-term plan is to achieve a mix of approximately six Government personnel and 29 Contractor personnel. Since the transition from Government to Contractor is highly dependent on attrition of the Government work force, the offeror's proposal regarding Tunnel 9 support should include a constant loading of 21 personnel.

PWS Sections 1.0, 2.0, and 3.0

Relative to the T&E activities at White Oak, the contractor will operate in very much the same manner as at Arnold AFB in supporting the Tunnel 9 operation, maintenance, technology, and investments as described in PWS sections 1.0, 2.0, and 3.0. The "test" facilities to be operated and maintained at White Oak include the Hypervelocity Wind Tunnel 9 and its supporting Vacuum Compressor Plant, Liquid Nitrogen Gas Supply System, and High-pressure Bottle Field. GSA provides utilities at White Oak. A small machine shop is also operated on site.

PWS 4.0

Because of GSA's role in providing most of the site infrastructure support, the AEDC White Oak site does not require as much contractor site support as is provided at Arnold AFB. For example, the contractor will not be required to provide security guards, utilities, custodial, snow removal, grounds upkeep, building maintenance, heating and air conditioning; hazmat; fire/rescue response; etc. at White Oak.

Additionally, not all support functions are duplicated at White Oak. For those items that are not site specific, the White Oak staff should make every effort to utilize services available at Arnold AFB. Generally, the White Oak site follows policies and procedures that are established at Arnold AFB and utilize the general support services available there to aid in implementation. For example, site security policies and procedures, health and industrial hygiene programs, and safety programs, although administered locally, should be coordinated closely with Arnold AFB guidelines and procedures. Tactical and strategic planning must also be coordinated, as well as maintaining common financial practices.

Those remaining site support functions that are either not provided by GSA or are not practical to manage from afar are performed primarily by the Government Staff at White Oak. For example, the Government is responsible for White Oak's industrial security program with the contractor acting in a Visitor Group capacity. Additional examples include administration of the local phone system; local computer systems and network operation and administration; office equipment rental, maintenance, and repair; security oversight; visitor control; badging; small purchase; shipping and receiving; safety; transportation; environmental management; etc.

PWS 6.0

Relative to Contractor Management, the contractor will use the corporate support services available at Arnold AFB whenever possible with local site management provided by a White Oak site manager and administrative assistant.

APPENDIX 3.1-1 TEST ASSETS

The AEDC Test assets are described below.

3.1-1:1 16T/16S/4T: The PWT 16-ft transonic tunnel (Propulsion Wind Tunnel 16T) is a continuous-flow, closed-circuit tunnel that can be operated at Mach numbers from 0.06 to 1.60. The PWT 16-ft supersonic tunnel (Propulsion Wind Tunnel 16S) is a continuous-flow, closed-circuit tunnel that can be operated at Mach numbers from 1.50 to 4.50. Mach numbers above 3.40 require operating the main drive and Plenum Evacuation System (PES) compressors in series. Tunnels 16T and 16S are not operated simultaneously. Test unit preparation, restoration, and cart installation may be done in one tunnel while testing in the other tunnel. Model preparation, assembly, and installation into the test carts shall be accomplished as necessary to meet the test unit schedule. Test unit restoration and cart, and/or model exchanges between tests shall be done as expeditiously as possible. Model buildup will be accomplished in a separate buildup area. Because of the addition of the Independent Drive System (IDS) in FY92, approximately 80 percent of the 4T work can be done independently of 16T and 16S. Tunnel 4T can be operated over a Mach number range from 0.1 to 2.0. The compressor drive motor is a 20,000 hp synchronous motor that can be powered by a Variable Frequency Power System (VFPS) providing infinite speed control from about 100 to 1,800 rpm. The Tunnel 4T compressor is a three-stage, axial flow machine. The Mach number range provided by this compressor is from 0.2 to 1.3. For Mach numbers greater than 1.3, airflow is provided by the PES compressors. Plenum evacuation is normally provided by F-unit, a second increment compressor. Both increments are required to support operations above M = 1.3.

3.1-1:2 A/B/C/ACL: Tunnel A is a 40- by 40-in., continuous, closed-circuit, variable-density, supersonic wind tunnel with a Mach number range of 1.5 to 5.5. The tunnel is served by a main compressor system that provides a wide range of mass flows and stagnation pressures up to a maximum of 200 psia. The 50-in. hypersonic tunnels are Tunnel B for Mach 6 and 8 and Tunnel C for Mach 4, 8, and 10. Both tunnels are closed circuit with axisymmetric contoured nozzles, and may be operated continually over a range of pressure levels with air supplied by the main compressor system. These tunnels are not operated simultaneously. Model preparation and assembly shall be accomplished as necessary to meet the test schedule. Test unit preparation, restoration, and test article installation may be done in one tunnel while testing in one of the other tunnels. Test unit preparation, restoration, and model exchanges between tests shall be done as expeditiously as possible. The Airflow Calibration Laboratory (ACL) is a continuous supersonic/ hypersonic tunnel used for small model testing and test probe calibrations. The test unit consists of a plenum or stilling chamber with screens, four interchangeable supersonic/hypersonic nozzles (M = 1.75, 2.50, 4.00, and 6.00), a diffuser, and a low-pressure cell or chamber (7.4-ft diameter 12-ft length). Each of the interchangeable nozzles is an axisymmetric, fully contoured, free-jet nozzle with a 4-in. exit diameter. The ACL can be run simultaneously with tunnels A or B provided the secondary mass flow system is not being utilized by those facilities. The ACL cannot be run simultaneously with Tunnel C.

3.1-1:3 H1/H2/HR/H3: High-Enthalpy Ablation Test (HEAT) test Assets H1/H2/HR/H3. The AEDC HEAT test units are the only state-of-the-art, high-pressure arc facilities in the world, providing high-enthalpy test conditions simulating aeroheating environments consistent with endoatmospheric flight at velocities from 5,000 ft/sec up to and exceeding 20,000 ft/sec. The HEAT Facility test units share utilities, including a power supply, raw water systems, a demineralized water system, and an air supply capable of providing up to 20 lbm/sec at 3,800 psi. The HEAT-H1 Test Unit provides high-pressure, high-enthalpy test conditions for qualification

of thermal protection materials, nose tips, and/or electromagnetic apertures and structures for hypersonic missiles, space access systems, and reentry vehicles. The re-entry nose tip test unit (HR) is an arc-heated unit performing similar tests and has been mothballed. The Arc-Heated Hypervelocity Wind Tunnel (H2) provides conditions suitable for aerothermal simulations of hypersonic flight. H3 is a 3-inch bore segmented arc heater with operational performance up to 150 atmospheres and is designed to provide proportionately larger high-enthalpy flows for testing of materials, aerothermal structures, and hypersonic propulsion components. After the model is installed and ready to test, one test run is considered normal for an 8-hour shift. Target performance is one run every two days for erosion testing and one run per day for ablation testing and one run every three days for Transpiration Cooled Nose Tip (TCNT) testing.

3.1-1:4 Ranges: There are two free-flight impact ranges (G and I). Range G can be converted from the free-flight configuration to the track configuration by swinging the track assembly into place. Typically 5-6 days are required to remove or install the track and ancillary data/support systems in Range G. Movement of crews or personnel among the test units may be required as the workload changes. Range I is used mainly for impact testing at a rate of 3 shots per week. The impact range can also be converted to a Free Piston Shock Tunnel (FPST) by interchanging the tube assembly. Approximately two runs per week can be conducted in the FPST.

3.1-1:4.1 Range G/Range I/Free Piston Shock Tunnel (FPST): The hypervelocity Range/Track G Complex consists of three test units. Range G consisting of a large bore (84-mm or 203-mm) two-stage light-gas gun, a 305-m long test chamber with projectile guidance capability (track), and a projectile recovery system. The second test unit (Range I), consisting of a 64-mm two-stage light-gas gun and a 10-m long target tank, is primarily used to perform impact and lethality tests. The third test unit is a FPST to perform real-gas testing for CFD code validation. The launch tube of the 64-mm two-stage light-gas gun is replaced with a shock tube, nozzle, and test section.

3.1-1:4.2 Ranges S1 and S3: The VKF Hypervelocity Impact Range S1 is equipped with a two-stage, light-gas launcher, which accelerates the projectile to the desired test velocity. The range has a blast chamber into which muzzle gases expand and in which the projectile is separated from the sabot which adapts it to the bore of the launch tube; a connecting tube, along which instrumentation can be located; and the three target chambers, where impact occurs. The VKF Bird Impact Range S3 is a test unit used primarily for testing aircraft components to determine their reaction to bird impacts. It consists of a launcher that accelerates the bird to the desired launch velocity and a covered concrete test pad where the target and its associated instrumentation are housed. Based upon the results of the Safety Hazard Analysis, it may be possible to operate S3 when Impact, Vibration, and Acceleration (IVA) Test Unit is occupied.

3.1-1:5 Aerospace Environmental Space Chambers: Aerospace environmental simulation capabilities include a variety of test facilities and support equipment. The test facilities include the Mark I Chamber, the 12V Chamber, Spacecraft Contamination Measurements Chambers, the DECADE X-ray Simulator, the Focal Plane Characterization Chamber (FPCC): Non-operational, the Focal Plane Array Test Chamber (FPATC), the 7V Chamber, the 10V Chamber, and Research Laboratory Chambers. These facilities are supported by an infrastructure that includes liquid nitrogen and gaseous/liquid helium supply systems, vacuum systems, personal and networked computers, and an extensive array of instrument and analytical diagnostics. Additional capabilities include modeling and simulation tools and applied technologies. The space environmental simulation chambers and supporting infrastructure are housed within three

adjacent buildings, the Engineering laboratory Addition (ELA) building, the Mark I building, and the DECADE building.

3.1-1:5.1 Mark 1: The Aerospace Environmental Chamber (Mark I) consists of a large, vertical, cylindrical vacuum tank, pumping systems, thermal environment systems, vehicle support and attitude control equipment, controls, and instrumentation suitable for conducting tests on large space vehicles and a variety of space subsystems. The chamber is contained in a room 68 by 68 by 109 ft high.

3.1-1:5.2 7V: The Aerospace Chamber 7V provides a test capability for calibration and performance characterization of infrared surveillance sensors and interceptor seeker sensors against space backgrounds. The chamber systems include the vacuum chamber, sensor antechamber, the vibration isolation system, the optical bench, and the cryogenic liner. The vacuum chamber is a horizontal stainless-steel, cylindrical shell 7 ft in diameter by 23-ft long with a 7-ft diameter by 7-ft-long antechamber on one end.

3.1-1:5.3 10V: The Aerospace Chamber 10V provides complete ground test support to the sensor community for large aperture surveillance sensors and kinetic kill interceptors. The 10V Chamber is a horizontal cylinder, 10 ft in diameter and 24 ft long.

3.1-1:5.4 12V: The Aerospace Chamber 12V provides a test capability for thermal balance testing of small space vehicles and components. Testing conducted in 12V includes measuring infrared signatures of reentry vehicles and decoys, zero-g tests, and satellite and subsystem thermal vacuum and thermal balance tests. The stainless-steel chamber is 12 ft in diameter and 35 ft high.

3.1-1:5.5 Spacecraft Contamination Chambers (COP/SAM/BRDF/SMOG/VUV): Contamination studies are typically performed in small vacuum chambers ranging in diameter from 18 in. up to 3 ft and in length from 1 to 5 ft. Most of the chambers have a vacuum capability of 10^{-6} to 10^{-7} torr and can be cryogenically cooled. The Cryogenic Optical Properties (COP) Chamber has been used for the experimental determination of the effects of thin-film contaminants condensed on cryogenically cooled optical components. The Solar Absorptance Measurements Chamber (SAM) has been used for reflectance studies of contaminated thermal control surfaces and for measurement of contamination effects on solar cell efficiencies. The Bidirectional Reflectance Distribution Function (BRDF) Chamber is used in contamination studies to measure the scattering effects of condensed contaminants on cryogenically cooled highly-polished mirrors. The Space Materials Outgassing (SMOG) Chamber has been developed to determine the total mass loss (TML) due to the material outgassing properties. The Vacuum Ultraviolet (VUV) Measurements Chamber provides a capability for measuring changes in the transmittance of optical surfaces contaminated by outgassing products.

3.1-1:5.6 DECADE Nuclear Weapon Effects (NWE): DECADE is an above-ground X-ray simulator capable of testing large-area operating electronic ensembles such as satellite surveillance, communication, and missile navigation subsystems.

3.1-1:5.7 Focal Plane Characterization Chamber (FPCC): The FPCC is a state-of-the art radiometric calibration and characterization facility for infrared detector and hybrid focal plane arrays.

3.1-1:5.8 Scene Generation Test Capability (SGTC): The SGTC projects complex scenes directly onto the sensor's focal plane array in real time using visible or infrared lasers. These

complex scenes are used to test a sensor's capability to detect, track, and discriminate targets against realistic backgrounds. This capability enables sensor developers to reduce development risks by testing focal plane arrays, data subsystems, and system algorithms against realistic mission scenarios early in the development phase of the acquisition process. The SGTC can also support operational test and evaluation requirements (OT&E) and can be integrated with other ground test facilities such as the AEDC wind tunnels to provide virtual flight testing (VFT) to validate/improve, through statistical means the operation of flight systems prior to flight testing. The SGTC is comprised of the Transportable Direct Write Scene Generator (TDWSG) and the Focal Plane Array Test Chamber (FPATC). The TDWSG was built to be transported to contractor test sites. The FPATC can be configured with three different size vacuum vessels. There are four small material property test chambers and four small component checkout test chambers.

3.1-1:5.9 Research Laboratory (4x10/UHV/7A/CryoVac): Environmental simulation capabilities include a research laboratory that contains several different cryovacuum test chambers for verifying the operational readiness of test article components and/or subsystems prior to full-scale assembly and test. Research laboratory chambers include the 4 x 10 Chamber, the Ultra High Vacuum (UHV) Chamber, the 7A Chamber, and the Cryopump Chambers. The 4 x 10 chamber is a general-purpose test cell and the largest in the research laboratory. The 4-ft. diameter by 10-ft-long horizontal chamber is equipped with a 77 or 20 K cryoliner. The 7A chamber is a general-purpose chamber, 3 ft in. diameter by 6.5 ft long with 77 or 20 K cryoliner. The Ultra High Vacuum (UHV) chamber provides a low radiometric background ($< 10^{10}$ photons/sec) for use in infrared source calibration and characterization. The research laboratory maintains two cryopump chambers and with added turbopumps provide approximately 1×10^{-8} torr vacuum and the capability of cooling to temperatures as low as 10 K for an extended period.

3.1-1:6 Propulsion Test Cells: Supports aircraft, missile, and spacecraft propulsion system research and development by conducting simulated flight tests over a wide range of Mach numbers and altitudes to provide data at precisely controlled conditions required to determine operational characteristics of aeronautical and astronautical propulsion systems.

3.1-1:6.1 J5 and J6: Test Cell J-5 is a horizontally arranged test cell designed primarily for static testing of large solid-propellant rockets up to 125,000 lb thrust at simulated pressure altitudes to 125,000 ft. J-5 has been mothballed to remove much of the AEDC facilities outside the explosive zone and the test workload has been moved to J-6. Test Cell J-6 is a horizontally arranged test cell designed for static testing of large solid-propellant rocket motors with up to 500,000-lb thrust at simulated pressure altitudes of 100,000 ft. The number of rocket motor firings per period of time varies with complexity of the system being tested. A weighted motor (equivalent Minuteman firings) concept shall be employed to set performance targets and to provide schedule planning information.

3.1-1:6.2 J3 and J4: Test Cell J-3 is a vertical test cell in which rocket propulsion systems up to 200,000 lb thrust or engines with a maximum nozzle exit diameter of 100 in. are tested under simulated high-altitude conditions. J-3 has been mothballed. Test Cell J-4 is a vertically oriented test complex designed for the static testing of large liquid- and solid-propellant rocket engines and entire propulsion systems at simulated altitudes of approximately 100,000 ft. The test complex is designed for an ultimate thrust capability of 1,500,000 lb. Support equipment now available limits the thrust capability to 500,000 lb. Performance levels for these cells cannot usually be predicted because of the varied nature of the tests. Estimated targets prior to test shall be used whenever possible.

3.1-1:6.3 SL-1: Test Cell SL-1 is a standard USAF T-9 (Large Turbofan Engine Noise Suppression System) sea level turbine engine test unit hush house configuration with a modified fuel supply capacity. This test unit provides a means of testing turbojet, turbofan, turboshaft, and turboprop engines under sea level (local altitude) ambient conditions. SL-1 is currently mothballed.

3.1-1:6.4 SL-2 & SL-3: Test Cells SL-2 & SL-3 are standard USAF T-9 (Large Turbofan Engine Noise Suppression System) sea level turbine test unit hush house configurations with significant modifications to provide additional capability over that available with the basic T-10. These test units have been modified with the capability to operate at either sea level ambient conditions, variable temperature, ram inlet conditions, or heated inlet sea level conditions without ram and to rapidly transition between these test configurations. Additionally, the test units can accomplish Corrosion Tests simulating operation in a sea based marine environment. The SL-2/SL-3 test cells are capable of testing up to 50,000 lb thrust engines at ram conditions of up to Mach 1.25 and temperatures ranging from minus 65° F to 350° F

3.1-1:6.5 T-1: Test Cell T-1 is 12.3 ft in diameter with length variable to approximately 57 ft. Airflow up to 800 lb/sec at a total pressure up to 70 psia, temperatures varying from -80° (at low pressures) to 650°F, and altitude simulation to 80,000 ft. T-1 is currently non-operational.

3.1-1:6.6 T-2: Test Cell T-2 is 12.3 ft in diameter with length variable to approximately 50.5 ft. Airflow up to 800 lb/sec at a total pressure to 70 psia, temperatures varying from -80° (at low pressures) to 650°F, and altitude simulation to 80,000 ft. T-2 is currently non-operational.

3.1-1:6.7 T-3: Test Cell T-3 is 12 ft in diameter and 15 ft in length. The cell is a high-temperature, high-pressure, small air-breathing propulsion test cell. T-3 is designed for the direct-connect testing of small air-breathing engines over a Mach number range from 0 to 4.0. T-3 is currently operational as T-3W (Westinghouse Combustor Rig). A liquid fuel system has not been installed as natural gas is used to fuel T-3W.

3.1-1:6.8 T-4: Test Cell T-4 is 12.3 ft in diameter with a length variable to approximately 47.8 ft. T-4 is used primarily for air-breathing engine tests. Airflow up to 800 lbm/sec at a maximum total pressure up to 70 psia, temperature variances from -80° (at low pressures) to 650°F, and altitude simulation up to 80,000 ft.

3.1-1:6.9 T-5: Test Cell T-5 is designed for performance, starting, and operability testing of small air-breathing propulsion systems over the altitude range from sea level to 80,000 ft. The cell is 7 ft in diameter by 17 ft long. The cell can accommodate continuous airflows up to 20 lb/sec at pressures up to 75 psia and temperatures ranging from -65° to 200°F. T-5 is currently non-operational.

3.1-1:6.10 T-7: Test Cell T-7 is designed for small aerodynamic tests and air-breathing propulsion system tests at altitudes from sea level to 80,000 ft. The cell is 7 ft in diameter and 9 ft in length. The cell can accommodate continuous airflows up to 20 lb/sec at pressures up to 40 psia and temperatures ranging from -65° to 650°F. T-7 is currently non-operational.

3.1-1:6.11 T-11: Test cell T-11 is of a cube configuration and is 10 ft. by 10 ft. by 17 ft. long, The test cell can be used for altitude testing of small turbojet, turbofan, and ramjet engines or aerodynamic models. The test unit is designed for performance, starting, mission simulation, functional, and operability testing of small air-breathing propulsion systems and small aerodynamic test articles over the altitude range from sea level to 80,000 ft. The cell can accommodate continuous airflows up to 75 lb/sec at pressures up to 75 psia and temperatures from –65° to 220°F.

3.1-1:6.12 T-12: Test Cell T-12 is 10 ft in diameter with a length of 20 ft. This test unit is designed for the testing of air-breathing turbo-prop engines with shaft loading from a dynamometer of up to 7000 horsepower. T-12 is currently in standby.

3.1-1:6.13 J-1: Test Cell J-1 is 16 ft in diameter and 65 ft long. This test cell is used primarily for direct-connect performance and stability testing of large air-breathing propulsion systems. This engine inlet air can be conditioned from -65° to 750°F. Simulated pressure altitudes up to 80,000 ft can be provided in the test cell by the facility exhaust compressors. Ejector-diffusers can be used to simulate higher altitudes in the test cell. Using the heated air inlet source, true simulated flight conditions can be provided over the entire flight envelope of most turbojet engines up to Mach 3.2 and 80,000 ft.

3.1-1:6.14 J-2: Test Cell J-2 is 20 ft in diameter and 67.3 ft long. This test cell is used primarily for direct-connect performance and stability testing of large air-breathing-type propulsion systems. The engine inlet air can be conditioned at -65° to 650°F. Simulated pressure altitudes up to 80,000 ft can be provided in the test cell by the facility exhaust compressors. Higher simulated altitudes may be attained in the test cell by the use of ejector-diffusers. True simulated flight conditions can be provided over the entire flight envelope of most turbine-type engines up to Mach 3.0 and 80,000-ft altitude.

3.1-1:6.15 C-1: Test Cell C-1 is designed for performance and operability testing of large augmented turbojet engines, although free-jet testing can be accommodated. The cell is 28 ft in diameter and 50 ft long. The engine inlet air can be conditioned at -100° to 650°F. An insulated duct may be installed inside the C-1 plenum providing a connection to facility heater H2 and extending the maximum obtainable inlet temperature to 1,020°F or Mach 3.8 test conditions.

3.1-1:6.16 C-2: Test Cell C-2 is designed for performance testing of large turbofan engines. The cell is 28 ft in diameter and 50 ft long. The engine inlet air can be conditioned at -100° to 650°F.

3.1-1:6.17 ETF Research Cells (R1D, R1E, R1A1, R2A2, R2H): These research facilities are typically used to support development efforts in propulsion, aerodynamics, and space simulation requirements for a variety of environmental conditions and system operational modes. R1D is for icing research; R1E is a research cell for subscale basis of proposed test programs for ETF Test Cells C-1 and C-2; R1A1 is for combustion research, R2A2 is for free-jet research, and R2H is for ultra-high altitude research. All the ETF Research Cells are considered non-operational.

3.1-1:7 Miscellaneous Test Units

3.1-1:7.1 Impact, Vibration and Acceleration (IVA): IVA is a specialized test unit typically used to conduct impact and vibration testing on large rocket motors. Due to the

proximity of IVA, S1, and S3, scheduling test in the three test units requires close coordination. Safety requirements dictate that Range S1 cannot be operated whenever a live rocket motor is installed in IVA. The IVA Test Unit has been dismantled.

3.1-1:7.2 Aerodynamic and Propulsion Test Unit (APTU): APTU is a test facility for testing airbreathing propulsion systems, aerodynamic systems, and materials while simulating flight conditions at supersonic and hypersonic velocities. Air for the high-pressure air storage system in APTU is provided by the VKF plant and operation of APTU is directly related to the availability of the VKF plant for support.

3.1-1:7.3 Tunnel 9: Tunnel 9 is a hypervelocity wind tunnel located in White Oak MD. In FY 98, AEDC assumed responsibility for the operation and maintenance of this facility. The facility was transferred from the Navy to the Air Force as a result of a BRAC decision to close NSWC White Oak. The contractor will perform daily operations and maintenance of this facility as directed by the Government. The contractor will ultimately become fully responsible for all operation and maintenance activities in the future.

APPENDIX 3.1-2 PLANT ASSETS

The Plant Assets to be maintained and operated by the contractor are:

ETF - Basic	PWT (including PES)
ETF - Addition	VKF
ASTF	Chambers Helium Storage Facility
	Nitrogen storage, conversion, and distribution systems

Many of these plants are interconnected and at times require support from other plants to achieve desired test conditions in their test units. Support needed by one plant from another plant(s) will be scheduled through the AEDC Operations Center so that conflicts in test schedules and priorities can be resolved.

Examples of these interconnections are:

Service	From	To
High pressure air	VKF	PWT
High pressure air	VKF	ETF
Low pressure/high volume air	VKF	ETF
High pressure/low volume air	VKF	ASTF
Dry air support	ETF	PWT
Exhaust scavenging	ETF	PWT
Exhaust supplement	PWT (PES)	ETF

The VKF operates the only high-pressure air storage system for the center. Use of the air stored in the APTU and VKF storage vessels will be coordinated through the AEDC Operations Center.

Plant Asset Descriptions: Additional information can be found on www.arnold.af.mil or the AEDC Test Facilities Handbook.

3.1-2:1 ETF Basic (ETF-B):

a. The ETF-B plant system consists of four centrifugal-flow air supply compressors and six centrifugal-flow exhaust compressors totaling 52,000 horsepower. The total air supply capacity of both systems can be used for test cells in either ETF-B (T-Cells) or ETF-A (J-1, J-2). Exhaust capacity for the J-Cells are provided by the ETF-A exhaust system or by the ETF-A and ETF-B systems in series. Exhaust capacity for the T-Cells is provided by the ETF-B exhaust system.

Special interconnecting ducting to the Propulsion Wind Tunnel exhaust compressors permits exhaust capability augmentation for ETF-A and ETF-B test cells. The ducting and valve arrangement in the air supply and exhaust systems provides many different compressor configurations necessary to establish the required test cell conditions.

b. Refrigeration is used to condition the air supplied to the various test cells. The ETF-B has a total of 2,670 tons of continuous mechanical refrigeration.

c. The Propulsion Consolidation and Streamlining (PC&S) Program is scoped to closed the 50 year old ETF A and B Plants. At the end of Phase IV of the PC&S Project, currently scheduled for completion in October 2003, the ETF-B Plant Airside will be closed. The ETF-B Plant exhauster compressors will remain in service until FY06. This program will reduce the number of station keepers (plant personnel) resulting in: 22 per shift in FY03, 14 per shift in each year: FY04, FY05, and FY06.

3.1-2:2 ETF Addition (ETF-A):

a. The ETF-A plant system consists of three axial-flow air supply compressors and two axial-flow exhaust compressors totaling 129,500 horsepower. The total air supply capacity of both systems can be used for test cells in either ETF-B (T-Cells) or ETF-A (J-1, J-2). Exhaust capacity for the J-Cells is provided by the ETF-A exhaust system or by the ETF-A and ETF-B systems in series. Special interconnecting ducting to the Propulsion Wind Tunnel exhaust compressors permits exhaust capability augmentation for ETF-A and ETF-B test cells. The ducting and valve arrangement in the air supply and exhaust systems provides many different compressor configurations necessary to establish the required test cell conditions.

b. Refrigeration is used to condition the air supplied to the various test cells. The ETF-A has approximately 6,840 tons. The total refrigeration capability can be used by one test cell in ETF-A; 8,180 tons are available for all other air-breathing cells in ETF-A and ETF-B.

c. The Propulsion Consolidation and Streamlining (PC&S) Program is scoped to close the 50 year old ETF A and B Plants. The ETF A Plant Airside compressors (XA11, XA12, XA21) were taken out of service in August of 2002. All J1 and J2 testing in FY03 will have the airside requirements supplied by the ASTF Airside compressors. The ETF A Plant refrigeration equipment (XJ2, XJ3, XJ4) will remain in service throughout FY03 and will not be removed from service until Phase IV of the PC&S Project is completed in October 2003. At this time the ETF-A Plant Airside will be closed. The ETF-A Plant exhauster compressors will remain in service until FY06. This program will reduce the number of station keepers (plant personnel) resulting in: 22 per shift in FY03, 14 per shift in each year: FY04, FY05, and FY06.

Note: The ETF basic and addition systems are interconnected to provide operating flexibility. The total air supply capacity of both systems can be used for any ETF test cell. The entire exhaust capacity can be used for the J-cells, but the T-cells can only use the basic exhaust system.

3.1-2:3 Aeropropulsion System Test Facility (ASTF) – (ETF-C):

a. The ETF C plant air supply system is comprised of six axial-flow air supply compressors. The compressors are arranged in stages such that four first stage and two second stage powered by four 27,500 hp and two 52,500 hp synchronous motors can deliver 2750 lbm/sec at the design point. The ETF-C exhaust system is comprised of 12 identical axial-flow exhaust compressors. Each exhauster is rated at 1,000,000 cfm. The exhaust compressors are arranged in stages such that there are eight first stage axial flow compressors, three second stage axial flow compressors, and one third stage axial flow compressor. These compressors are powered by eight 27,500 hp synchronous motors and four 44,000 hp synchronous motors. The

compressor drive synchronous motors are sequentially started by two variable frequency starting systems, enabling the plant to be brought on line quicker than using induction starting motors (as in the older ETF A and B plant). In addition, the process air supply ducting is fabricated of stainless steel or stainless cladding to minimize contaminants.

b. Refrigeration is used to condition the process air supply. Two process air coolers provide 15,400 tons of refrigeration. A third cooler, designed for conditioning atmospheric (inbleed) air to Test Cell C-2, has 7,000 tons of refrigeration.

3.1-2:4 Propulsion Wind Tunnel (PWT) Main Drive:

a. The PWT compressor drive system with a maximum total capacity of 271,000 hp is used for both Tunnels 16T and 16S. It consists of two wound rotor induction motors and two synchronous motors. Disconnect couplings permit the four motors to be operated with either the Tunnel 16T compressor or Tunnel 16S compressor.

b. The Tunnel 16T compressor, which normally operates at a constant speed of 600 rpm, is a three-stage, axial-flow machine having a 30-ft tip diameter and a hub-to-tip ratio of 0.6. The inlet guide vanes and the three interstage stator rows of the compressor are remotely controllable through an angle range that satisfies the range of volume flow requirements. Subsynchronous, variable-speed operation is possible using the two wound rotor induction motors. Operating the compressor in this manner extends the tunnel operating range to low subsonic Mach numbers.

c. The main compressor of Tunnel 16S consists of four axial-flow compressors (barrels) which are oriented so that any number from one to four barrels may be operated in series. The number of barrels operating in series is controlled by a system of iris valves and disconnect couplings located between each barrel. The compressor operates at a constant speed of 600 rpm with volume flow and pressure ratio adjustment provided by the remotely controlled inlet guide vanes and stator blades of the first, second, and third barrels. The first three barrels are four-stage, axial-flow compressors, and the fourth, a six-stage compressor

d. The PWT-Sustainment Program is bringing automation to PES and PWT Main Drive, thus changing the required future skill mix. The automated plant is planned for late FY04 or early FY05. The automation of the PES will be completed in late FY03 with complete automation of first increment and cutover and complete automation of the second increment and 4T IDS. This will reduce the number of station keepers (plant personnel) resulting in: 8/shift in (FY03), 5/shift in (FY 04), and to 2/shift (FY 05).

Note: This is one drive train in which all four motors can power either the 16T or 16S compressors.

3.1-2:5 PWT Plenum Evacuation System (PES):

a. The PES is composed of two identical groupings or increments of compressors, drive equipment, and associated ducts and valves. Each increment has five Allis-Chalmers VA-1409 compressors, which are nine stage-axial-flow machines, and one Allis-Chalmers VA-1107, which is a seven-stage axial-flow machine. The arrangement of the ducts and valves of each increment permits the compressors to be operated in one-, two-, or three-stage compressor configurations.

b. The VA-1409 compressors are each rated at 4,620 cfs (measured at 100°F) at a design pressure ratio of 3.3, and the third-stage VA-1107 compressors have a design point of 1,250 cfs (100°F) at a pressure ratio of 2.0. The compressors operate at a constant speed of 3,600 rpm. All compressors have inlet guide vanes that are remotely controllable through an angle range of ±15 deg from design conditions.

c. The compressors are driven in groups of two by a common drive system; this makes a total of three drive groups for each increment. Two groups consist of two VA-1409 compressors

driven in tandem by a 28,500-hp synchronous motor, and one group of one VA-1409 and one VA-1107 is driven in tandem by a 14,000-hp synchronous motor. The synchronous motors are powered from a Variable Frequency Power System (VFPS). The total drive power of each increment is 71,000 hp at 100-percent rated load; however, a continuous service factor of 15 percent provides an available power of 80,650 hp.

3.1-2:6 Von Kármán Gas Facility (VKF) - (Main Compressor System):

a. The main compressor system for continuous operation is comprised of six axial and seven centrifugal compressors arranged in nine stages. These machines are arranged into five groups, each of which is powered by a 16,000-hp synchronous motor and a 2,500-hp wound-rotor motor for a total installed horsepower of 92,500. The first stage is rated at 600,000 cfm inlet with a minimum inlet pressure of 0.25 psia.

b. The compressors are interconnected by a duct and piping system which includes intercoolers and valves whereby one to five stages are used to deliver air to Tunnel A for operation between Mach numbers 1.5 and 5.5. Five stages are used to deliver air to Tunnel B for operation at Mach 6, seven stages for Tunnel B Mach 8 operation, and 7 or 8 stages are used to deliver air to Tunnel C for operation at Mach 8 or 10. Either seven or nine stages are used for Aerothermal Tunnel C at Mach 4, depending on the required temperature and pressure.

3.1-2:7 VKF (High-Pressure Addition):

a. Air is stored in a 29,770-ft^3 storage system at pressures up to 3,800 psia. This system is composed of the 7,550-ft^3 VKF storage reservoir and the 22,200-ft^3 APTU storage facility. The maximum capacity of the combined storage system is approximately 542,000 lb of air.

b. An auxiliary compressor system is capable of charging the storage system at the rate of 6.0 lb/sec. In addition to the main compressor system, a two-compressor system comprising the tenth and eleventh stages of the main plant can be used to charge the storage reservoirs at the rate of 84 lb/sec at 3,800 psi. The two-compressor system is powered with a 7,000-hp induction motor.

3.1-2:8 Chamber Plant:

The helium refrigeration system is made up of a 3-kw refrigerator and a 0.5- kw and 1-kw helium liquefaction system. The refrigerators and liquefaction systems are integrated to provide operating flexibility. The 3-kw refrigerator can supply the chambers or the helium liquefiers with gaseous helium at 10 K. The 0.5-kw gaseous helium refrigerator primarily supports the Research Lab chambers that include the Focal Plane Characterization Chamber, several research chambers, and contamination chambers. This unit has a more rapid startup time than the larger refrigerators, thus providing extremely flexible operation of the smaller chambers. The 0.5-kw refrigerator can produce 35 liters/hr of liquid helium. The 1-kw refrigerator is dedicated to the production of liquid helium at 80 liters/hr. All of the test chambers and helium refrigerators are connected to the closed-loop, high-pressure helium distribution system.

3.1-2:9 Central Nitrogen Storage, Conversion and Distribution Systems:

The Central Nitrogen Storage Facility consists of five liquid nitrogen dewars. Liquid nitrogen can be used for testing and also piped to one or both gas to liquid conversion facilities. Gaseous nitrogen is stored in 23 high pressure storage vessels (5,000 psi) and provides a capacity of 5,280.7 cubic feet. There is approximately 13,750 feet of piping associated with this system.

An additional Nitrogen Conversion Plant (Air Separation Plant) with piping between the new plant and existing plant is currently being installed. Currently this new plant is sized at 30 Tons.

3.1-2:10 Central Helium Storage Facility:

The Central Helium Storage Facility consists of twelve high pressure storage vessels (5,000 psi) and provides a capacity of 2,560.4 cubic feet. There is approximately 1,000 feet of piping associated with this system.

APPENDIX 3.1-3 INSTRUMENTATION AND CONTROLS

3.1-3:1 Overview

Approximately 52,000 instruments are used to acquire test data, control test article's position, and operation, and monitor and control plants. These instruments are contained in the test and plant assets listed in Appendices 3.1-1 and 3.1-2. The instruments in the test and plant assets have been categorized as instrumentation, information technology, data acquisition, and control systems, and are defined below:

1. **Instrumentation Systems**: a collection of equipment used to measure, transmit, and/or display physical phenomena such as pressure, force, temperature, vibration, position, etc. Examples include measurement sensors such as accelerometers, pressure transducers,

thermocouples, load cells, flow meters, gages, meters and interconnect wiring with electrical disconnects.

2. **Information Technology Systems**: Any equipment or interconnected system or subsystem of equipment that is used in the automation acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. Information Technology includes computers, ancillary equipment, software, firmware, and similar procedures, services, and related systems.

3. **Data Acquisition Systems**: a collection of electronic equipment including signal conditioners, amplifiers, multiplexers, working standards, computers, internal system networks and application software used to gather test data. These are heavily customized systems that integrate multiple data sources to form a general-purpose data system that is custom configured for each test program. Examples include: EDAPS including reflective memory, CADDMAS, PWT Sustainment Subsystems such as SDAS, DDAS, PSS and reflective memory.

4. **Control Systems**: a collection of equipment such as controllers, actuators, servo valves, gages, valve positioners, PLCs, computers, internal system networks and application software used to control and monitor (1) test article and test cell operation and (2) plant operations and equipment. Examples of test control systems include TACS (Test Article Control System), TAPS (Test Article Positioning System), Engine Throttle System, and Test Control Sequencer. Examples of plant control systems include Machine Condition Monitoring (MCM), Compressor Monitor and Control Systems, Fuel Control Systems, Deluge Systems, etc.

Table 3.1-3:1 provides an overview of the systems assigned to each of the test assets in the four categories noted above. The data acquisition and the information technology systems in Table 3.1-3:1 are classified as Information technology (IT). The instrumentation and control systems are not categorized as IT. However, instrumentation and control systems may include computers, networks, and software. Such computers, networks, and software are considered as IT and are addressed in PWS 5.1

TABLE 3.1-3:1

PROCESS NO	Instrumentation	Information Technology	Data Acquisition System	Control System	Grand Total
AMSC	25	460	2		487
APTU	220	57	612	72	961
Chamber 10V	44	23	19	18	104
Chamber 12V	11	1	4	5	21
Chamber 7V	87	60	42	55	244
Chambers Research	128	107	124	52	411
Chambers Support	459		101	158	718
DECADE	238	153	157	5	553
ETF Test Support	2870	337	1432	1417	6056
GN2 NETWORK	4			6	10
HPA NETWORK	4			14	18
HTL	700	72	1220	87	2079
INSTR AND DIAG	1222		297	48	1567
Instrument Crib	486	66	90	43	685
JP FUEL NETWORK	56		4	69	129
MARK 1	35	160	2	4	205
MET LAB	132			35	167
MODEL SHOP	277	184	1	136	598
PC LAN	73	2367			2440
Plant A/B	495	15		1838	2348
Plant C	352	2	2	2186	2542
Plant P	31	5		414	450
Plant V	36			887	923
PWT Support	681	452	40	854	2027
R Cells	116	16	425	144	701
Range G	579	185	247	30	1041
Range S1	24		15		39
Rocket Cell J3	36	2	528	85	651
Rocket Cell J4	186	21	851	299	1357

PROCESS NO	Instrumentation	Information Technology	Data Acquisition System	Control System	Grand Total
Rocket Cell J5	55	25	348	106	534
Rocket Cell J6	1085	35	1179	453	2752
Technology	42	523	1	8	574
Tunnel 16S	356	135	162	138	791
Tunnel 16T	658	60	414	229	1361
Tunnel 1T	41	14	43	6	104
Tunnel 4T	115	90	220	114	539
Tunnel 9	77	373	9	1	460
Tunnels A/B/C	619	539	497	244	1899
Turbine Cell C1	494	403	1068	343	2308
Turbine Cell C2	123	70	834	119	1146
Turbine Cell J1	155	21	1684	135	1995
Turbine Cell J2	168	14	1052	107	1341
Turbine Cell SL2	182	93	333	56	666
Turbine Cell SL3	76	89	188	12	365
Turbine Cell T1	103	31	563	69	766
Turbine Cell T11	163	53	140	46	402
Turbine Cell T12	49	33	83	29	194
Turbine Cell T2	69	21	295	50	435
Turbine Cell T3	196	32	555	72	855
Turbine Cell T4	241	101	1320	136	1798
Turbine Cell T5	25	14	230	36	305
Turbine Cell T7	30	25	370	29	454
VKF SUPPORT	340		37	112	489
Grand Total	**15069**	**7541**	**17840**	**11615**	**52065**

APPENDIX 3.1-4 UTILITY ASSETS

3.1-4:1 Electrical System:

- Nine 161KV Switchyard
- Twenty-nine 161KV Transformers
- Twenty 161KV Circuit Breakers
- Approximately 13,000 LF of 161KV cables and protective piping systems
- Approximately 375,000 LF of overhead and underground 13.8 and 6.9KV lines
- 61 Unit Substations
- Cathodic Protection System
- Meters and power measuring equipment

3.1-4:2 Raw/Cooling Water System:

- Primary Pumping Station
  - Six 25,000 GPM Pumps; six 2,000 HP, 4.16 KV motors
  - Valves and Electrical Equipment
- Secondary Pumping Station
  - Eight 25,000 GPM Pumps; eight 1,750 HP, 4.16 KV motors
  - One 10,000 GPM Pump, one 900 HP, 4.16 KV motor
  - Three 3,300 GPM Pumps; three 250 HP, 480 V motors
  - Valves and Electrical Equipment
- 57 Million Gallon Secondary Reservoir
- ASTF Cooling Water System
  - 2 Million Gallon Reservoir
  - Twelve Cooling Towers
    - 983,000-Gallon Storage
    - One 5,000 gallons per minute (GPM) Pump; one 400 HP, 2.4 KV motor
    - One 10,000 GPM Pump; one 800 HP, 6.9 KV motor
    - One 15,000 GPM Pump; one 1,250 HP, 6.9 KV motor
    - One 25,000 GPM Pump; one 2,000 HP, 6.9 KV motor
    - Three 50,000 GPM Pumps; three 4,000 HP, 6.9 KV motors
    - Twelve Cooling Fans; eight 150 HP, 2.4 KV motors
  - Return Basin
    - 1,300,000-Gallon Storage
    - One 5,000 GPM Pump; one 200 HP, 480 V motor
    - One 10,000 GPM Pump; one 450 HP, 480 V motor
    - One 15,000 GPM Pump; one 700 HP, 6.9 KV motor
    - One 25,000 GPM Pump; one 1,000 HP, 6.9 KV motor
    - Three 50,000 GPM Pumps; three 2,250 HP, 6.9 KV motors
- Rowland Creek Pump Station
  - Four 25,000 GPM Pumps; four 2,000 HP, 4 KV motors
  - Two 12,500 GPM Pumps; two 1,000 HP, 4 KV motors
  - 3,500 LF of 72-inch Steel Water Piping
- Elk River Dam
  - Three tainter gates
  - Two sluice gates

  - One leaf gate
- Bradley Creek Pump Station -- Three 1,000 GPM Pumps
- Brumalow Creek Pump Station -- Two 1,000 GPM Pumps
- FAMCAMP
  - One well and pump rated at 30 GPM
  - 450 Ft of distribution lines
- AEDC Golf Course (One well and pump rated at 14 GPM)
- Meters and water measuring equipment

3.1-4:3 Steam System:

- Steam Plant A
  - Four Boilers producing 200 pounds per square inch (PSI) Steam
  - One 35,000 lb/hr
  - Three 60,000 lb/hr
  - Four 273,000 lb (H2O) capacity accumulators
  - Three 376,000 lb (H2O) capacity accumulators
- J6 Steam Plant
  - One Boiler Producing 740 PSI Steam (37,500 lb/hr)
  - Six 376,000 lb (H2O) capacity accumulators
- Steam Plant B (Mothballed)
- Approximately 175,000 feet of steam distribution lines ranging in size from ½ to 14 inches
- Valves, devices, steam traps and associated equipment
- Meters and steam and condensate measuring equipment

3.1-4:4 Fuel System:

- Test and Bulk Fuel Farms and Distribution Systems
  - 12 Tanks with total capacity of 312,600 gallons in the test fuel farm
  - 5 Tanks with total capacity of 1,682,000 gallons in the bulk fuel farm
  - 1 Tank with total capacity of 200,000 gallons at Steam Plant A
  - Pumps, Meters, Valves, Gauges, Strainers, Filter Separators, Static
  - Grounds, And Fill Stands
- Meters and fuel measuring equipment

3.1-4:5 Potable Water System:

- One 2,250,000 GPD Treatment Plant
- Two 1,000 GPM pumps
- One 500 GPM pump
- One 2,000 GPM Emergency Pump
- Two 250,000 Gal Clear Wells (for storage)
- One 250,000 Gal Elevated Tank
- 148,400 Ft of Distribution Lines
- Estill Springs Water Distribution System (Services VOQ, Lakeside Club, Military Family Housing, Gossick Leadership Center, AEDC Recreation Area, FAMCAMP, Girl Scout Camp)

  - Approximately 12,500 Ft of Distribution Lines
  - One Well and Pump Rated at 60 GPM
- AEDC Airfield (One well and pump rated at 10 GPM)
- AEDC Golf Course (One well and pump rated at 14 GPM)
- Rifle Range (One well and pump rated at 30 GPM)
- Backflow preventers, valves, gauges and associated equipment
- Meters and water measuring equipment

3.1-4:6 Wastewater System:

- One Retention Reservoir
- Two Oil Skimming Ponds
- Two Oil Skimmers
- Discharge Control Gates and Diversion Canals
- Three Air Strippers
- Sanitary Sewer System
  - One digester (5,900 cubic feet)
- Three sludge drying beds (1,728 square feet)
  - Trickling filter (5,500 square feet)
  - Primary settling tank (19,750 gal)
  - Secondary settling tank (17,962 gal)
  - Collection system (Six miles with fifteen lift stations)
  - One equalization basin (100,000 gallons)

- Off-site wastewater facilities to include:

UNIT	LOCATION	CAPACITY
Septic Tank (ST)	Primary Pumping Station	750 gallons per day (GPD)
Lift Station & ST	Gossick Leadership Center	750 GPD
Lift Station & ST	Arnold Lakeside Club	16,000 GPD
Lift Station	Arnold Lakeside Club Beach	1,500 GPD
ST	Golf Course	500 GPD
Two STs	Main Recreation Area	2,700 GPD
Package-type Waste Plant	Family Housing and VOQ	30,000 GPD
ST	FAMCAMP	1,200 GPD
ST	Hobby Shop	500 GPD
Wastewater Lines	Golf Course	252 linear feet (LF)
Wastewater Lines	Family Housing	3,018 LF
Sand Filter	Rifle Range	10,000 GPD

- Septic tanks at other various locations
  - 30 tanks
  - 3 privies
- Storm Sewer System
  - 38.6 miles of various size mains and open ditches
  - 96 manholes
  - 472 drop inlets
- Five (IRP) Ground Water Treatment Facilities and Associated Equipment
- Separators and Traps

  - 27 oil-water separators
  - 8 grease traps
  - 7 oil traps/siphon dams
- Meters and wastewater measuring equipment

3.1-4:7 Refrigeration, Cooling and Ventilation Systems:

- Four Test Cell Conditioning Systems (Located at T-3, J-4, J-5 and J-6)
- Two Test Article Conditioning Systems (Located at Rocket Prep Areas 2 and 3)
- Two Small Environmental Chambers (Located at PMEL)

3.1-4:8 Propane Storage and Distribution System

- Various sites at AEDC

3.1-4:9 Natural Gas System:

- One Measurement Station, Static Grounds, and Fill Stands
- Approximately 9,500 feet of piping
- Meters and measuring equipment

3.1-4:10 Fire Suppression System:

- Six pressure vessels and associated piping and devices supplying carbon dioxide for Test Cell fire suppression

Note: Utility assets are predominantly mission supporting in nature. Over 90% of the operations and maintenance cost is currently funded through utility pools where 3600, 3400 and other appropriations are merged through utility rates. Infrastructure real property codes are primarily 3400, however, the Government has determined that utility operation and maintenance must be performed in an integrated manner with testing and test plant operations. It has also been determined that separating parts and pieces of the overall utility effort is not practical from a management planning and reporting standpoint. It is for these reasons that some clearly isolated potable or wastewater systems are including in the RDT&E utilities listing.

APPENDIX 3.1-5 MACHINE AND FABRICATION AND LABORATORY ASSETS

3.1-5.1 Machine & Fabrication Shop:
The Machine & Fabrication Shop, commonly referred to as Model Shop, is an integral part of AEDC providing critical machining, hardware/electrical fabrication, installation, and maintenance services. The general Machine Shop consists of large machining equipment, including a 20-foot diameter vertical lathe, a 14 x 10-foot computer numerical controlled (CNC) milling machine, and a CNC turning center capable of handling up to 40 x 120-inch long parts. These machines enable the fabrication of very large components for all types of ducting, hatches, doorframes, and thrust stands. Multi-skilled craftsmen provide fabrication and on-site installation of test hardware such as large ducting, pressure vessels, and vacuum vessels. Welding services are performed by a pool of welders certified in accordance with AEDC-ENGR-STD-T5.

3.1-5.2 Precision Measurement Equipment Laboratory (PMEL): The Precision Measurement Laboratory (a Type IIC laboratory) provides a full range of measurement capabilities. This Lab is responsible for providing dimensional measurement support throughout the base as required. PMEL calibration and repair services are required for an inventory of over 39,000 TMDE items.

3.1-5.3 Chemical Laboratory: The Chemical Laboratory provides a full range of chemical analysis and measurements. This Laboratory is responsible for providing chemical analysis for test and base support measurements and determinations as required. Services include analyses of fuels, oils, water, asbestos, hazardous material, and plastics. Chemical Laboratory assets include a liquid chromatograph, sonic dismembrator, distilling unit, water analyzer, spectrophotometer, atomic absorption spectrophotometer, gas/mass spectrometers, gas chromatographs, dual column programmed temperature gas chromatograph, ion chromatograph, automatic mercury analyzer, inductively coupled Plasma analyzer, dual ferrograph analyzer, organic Halide analyzer, trace gas analyzer, viscosity tester, adiabatic calorimeter, NMR analyzer, flash point tester, and a density meter.

3.1-5.4 Metallurgical and Non-Destructive Examination (Met/MDE) Laboratory: The Met/MDE laboratory provides comprehensive support in the areas of mechanical testing, failure analysis, scanning electron microscopy, metallography, and materials selection and processing. NDE techniques used by our ASNT SNT-TC-1A certified inspectors include liquid penetrant, magnetic particle, ultrasonic, radiography, eddy current, and helium mass spectrometer leak testing. A 6000 Rad/min linear accelerator is used for radiography of solid rocket motors and heavy sections; field services are also available for all methods using portable equipment.

APPENDIX 4.3.1-1 BASE SUPPORT ASSETS

Assets to be maintained and repaired include:

4.3.1-1:1 Refrigeration, Cooling, Heating and Ventilation Systems:

- Approximately 450 AC units ranging in size from 1/4 to 400 tons
  - 40 Military Family Housing A/C units
  - 172 window units
- Several hundred small appliances, refrigerators, and water coolers
- 20 walk-in refrigerators

4.3.1-1:2 Electrical Support System:

- 38 electric generators ranging from 2 - 1000KW
- Grounding and lightning protection systems
- 32,500 feet of streetlights on three circuits
- Electric machines and appliances
- Control circuits to operate and monitor electrical systems and equipment
- Fire and intrusion detection systems

4.3.1-1:3 Cranes

- 116 monorail cranes; 1/2 to 20-ton capacity
- 69 overhead cranes; 1 to 150-ton capacity
- 49 jib cranes; 250lbs to 8-ton capacity
- 41 floor cranes; 325lbs to 3-ton capacity
- 17 stationary, gantry, A-frame, man-lift, hoists; 1/4 to 5-ton capacity
- 9 hatch hoists; 1 to 95-ton capacity

4.3.1-1:4 Energy Management and Control Systems (EMCS)

- 60 building monitoring systems
  - Over 2,100 monitoring points
- One central EMCS computer in Building 1525
- Four EMCS color terminals in Buildings 1507, 1525, 1478, and 1099
- Three black and white terminals in Buildings 350 and 1525
- Data transmission cables, field devices, sensors, controls, cards, computers, and terminals

4.3.1-1:5 Pavements, Railroads, and Appurtenances

- 18 miles of rigid pavements
- 48 miles of flexible pavements
- 53 miles of crushed rock surfaced roads
- 14 miles of unimproved roads
- 9,600 square yards of concrete parking
- 142,000 square yards of bituminous parking
- 5,700 square yards of crushed rock parking
- 3,450 square yards of concrete storage
- 10,600 square yards of bituminous storage
- 63,800 square yards of crushed rock storage
- 100,000 square yards of bituminous airfield runway

- 12,645 square yards of bituminous airfield parking apron
- 8,360 square yards of bituminous airfield taxiway
- Railroad tracks
  - 16 miles of track
  - Numerous switches, frogs, guard rails, ballasts, road bed slopes and ditches, back-slopes, culverts, trestles, grade crossings, signals and markings

4.3.1-1:6 Grounds
- 362 acres of improved grounds
- 766 acres of semi-improved grounds
- 180 acres of semi-improved grounds on the airfield
- 33,241 acres of unimproved grounds
- 55 miles of right-of-way around paved roads
- 16 miles of railroad right of way
- 51 miles of vegetation encroachment prevention around other roads

4.3.1-1:7 Structures and Facilities (See ACES 7115 Report in Competition Library)
- 327 buildings with approximately 2.8 million square feet
- Test facility buildings, administrative office space, warehouses, cafeterias, repair shops, machine shop, laboratories, Military Family Housing

4.3.1-1:8 Refuse Collection and Disposal
- Approximately 160 dumpster containers
- 2 trash cans each at 40 MFH units

4.3.1-1:9 Military Family Housing
- Approximately 10 acres of grounds
- Forty housing units (varying in size from 1,080 to 2,100 square feet)
  - Each unit includes range, dishwasher, refrigerator, and garbage disposal unit

4.3.1-1:10 Base Civil Engineering Shops
- Carpentry
- HVAC
- Paint
- Roads and Grounds
- Pipe
- Machinist
- Electric
- Sheet Metal
- Ironworker
- Transportation

APPENDIX 5.1.1-1 SCOPE OF LEGACY MANAGEMENT INFORMATION SYSTEMS

Locally Developed Legacy Management Information Systems

Except as noted, these systems are maintained only to close out financial transactions and provide access to historical data. Except as noted, they are programmed in a fourth generation programming language (Computer Associates IDEAL), consisting of 10,000 program modules, with 300,000 lines of code. These systems include 330 Databases, 5000 Datasets, 3500 Tables, 60,000 Data Elements, 50 gigabytes of data in total. Infrequent software changes may be made to correct critical errors. Total support is less than one full time equivalent per year.

Advanced Schedule Management System (ASMS) – test facility scheduling
Arnold Information Management System (AIMS) – consists of:
- **Financial Management System (FMS)** – main financial system
- **Work Order Management System (WOMS)** – used for scheduling facility outages
- **Security** – provides access controls to remaining AIMS modules
- **Pension Module** – this capability, which is written in COBOL has not been replaced, and is still used
- **Contract Management Information System (CMIS)** – Air Force Contracting Division purchasing system

AIMS Client Server Reporting System – Displays downloaded AIMS financial information, is programmed in Visual Basic. It includes 20 SQL Server databases, 100 tables, and 20 gigabytes of data.

COTS Software Products

PeopleSoft HRMS – Human resources system used by contractor personnel, includes timecards– 6 Databases, 81970 tables, 26 gigabytes of data.
PeopleSoft Financials – Used by both AF and contractors, interfaces to Air Force standard systems (JOCAS II, GAFS/BQ) – 8 Databases, 43572 tables, 63 gigabytes of data.
PeopleSoft EPM – Data archival and data warehouse.
Synergen – Maintenance management system – asset tracking, work orders, purchasing, workflow -- 7 Databases, 4583 tables, 26 gigabytes of data.
Primavera P3e – Project management system– 2 Databases, 601 tables, 3 gigabytes of data
Metaphase – Product data manager, used to support Computer Aided Engineering– 2 Databases, 5135 tables, 4 gigabytes of data
Informatica – Interface mapping between other COTS software products– 4 Databases, 1461 tables, 2 gigabytes of data.

Note: The AEDC Source Selection Library contains an extensive list of COTS support tools and design tools.

Locally Developed Current Management Information Systems

System Interfaces (see Informatica)

There are a variety of indexes, triggers, views, and interfaces that are also managed as part of routine operations and maintenance.

Production Hardware Environment

Hardware Device Name	Hardware	CPU(s)	RAM	Disk Storage Capacity	Operating System	Operating System Version	Application	Description
620EPM01	Gateway 9200	4 x 550 Mhz	1 GB	34 GB	Windows NT	Windows NT SP6a	Enterprise Performance Management, Cognos	Application Server
AEDC_ACS_CM	Dell PowerEdge 2400	Pentium 4 2 x 1 Ghz	1 GB	18 GB	Windows 2000 Adv Server	Windows 2000 Advanced Server SP2	PVCS Dimensions	Application Server and Database Server
AEDC_CMMS1	Dell PowerEdge 6450	Pentium Xeon 4 x 700 Mhz	2 GB	100 GB	Windows NT	Windows NT 4.0 SP6A	Financials, Passport Gold, Power Center	File Server
BARNEY	DEC 8400	6 x 440 Mhz	8 GB	597 GB	DEC UNIX	DEC Tru64 5.0A(2) 64 bit	Financials, Human Resources, Networker	Database Server
CSR003	Dell PowerEdge 4300	2 x 550 Mhz	512 MB	16 GB	Windows NT	Windows NT 4.0 SP6A	Metaphase	File Storage/Backkup Server
CSR004	Dell PowerEdge 6100	2 x 200 Mhz	512 MB	24 GB	Windows NT	Windows NT 4.0 SP6A	Metaphase	File Storage Server
CSR005	Dell Optiplex GX1	Pentium III 1 x 500 Mhz	256 MB	8.6 GB	Window 2000 Server	Window 2000 Server SP2	Metaphase	Print Server
CSR006	Dell PowerEdge 6300	4 x 400 Mhz	512 MB	20 GB	Window 2000 Server	Window 2000 Server SP2	Metaphase	License Manager Server
CSR007	Dell Optiplex GX1	Pentium III 1 x 500 Mhz	256 MB	8.6 GB	Window 2000 Server	Window 2000 Server SP2	Metaphase	Print Server
CSR009	HP9000/L2000	2 x 440 Mhz	2 GB	27 GB	HP UNIX	HP UNIX 11.11	Metaphase	Database Server
CSR010	Dell Optiplex GX1	Pentium III 1 x 500 Mhz	256 MB	8.6 GB	Windows NT	Windows NT 4.0 SP6A	Metaphase	Software Distribution Server
CSR011	Dell Optiplex GX1	Pentium III 1 x 500 Mhz	256 MB	8.6 GB	Windows NT	Windows NT 4.0 SP6A	Metaphase	File Storage Server
CSR012	CUTTING EDGE CD-ROM SERVER	1 x 500 Mhz	64 MB	80 GB	Proprietory	N/A	Metaphase	Cutting Edge CD-ROM Server
CSR013	Dell Optiplex GX1	Pentium III 1 x 450 Mhz	256 MB	8.6 GB	Window 2000 Server	Window 2000 Server SP2	Metaphase	Print Server
EPM1	Dell PowerEdge 6650	4 x 1.5 Ghz	4 GB	72 GB	Windows 2000 Adv Server	Windows 2000 Advanced Server SP2	Enterprise Performance Management	Database Server
HRMS1	HP9000 L3000	Pentium Xeon 4 x 700 Mhz	2 GB	72 GB	Windows NT	Windows NT 4.0	Human Resources	Application Server
HRMS1	Dell PowerEdge 6450	Pentium Xeon 4 x 700 Mhz	2 GB	72 GB	Windows NT	Windows NT 4.0	Human Resources	Application Server
PEOPLESOFT	SUN 3800	2 X 750 Mhz	4 GB	90 GB	Solaris	Solaris 8	Human Resources, EPM	Web Server

SCOOBY	HP9000 L3000	4 x 550 Mhz	6 GB	576 GB	HP UNIX	HP-UX 11.0 U (64 bit)	Primavera, Synergen, Power Center, Networker	Database Server
SYNPRO1	Dell PowerEdge 6450	Pentium Xeon 4 x 700 Mhz	4 GB	180 GB	Windows 2000 Adv Server	Windows 2000 Advanced Server SP2	Synergen	Web, Application , and Reports Server
SYNPRO2	Dell PowerEdge 6450	Pentium Xeon 4 x 700 Mhz	4 GB	180 GB	Windows 2000 Adv Server	Windows 2000 Advanced Server SP2	Synergen	Web, Application, and Reports Server
ITISDB	Dell 6400	Pentium Xeon 2x 700 Mhz	1 GB	136 GB	Windows 2000 Server	Windows 2000 Server SP2	MatrixOne	Database Server
ITIS	Dell 6400	Pentium Xeon 4x700 Mhz	2GB	40 GB	Windows 2000 Server	Windows 2000 Server SP2	MatrixOne	Application Server
Notes:	CSR003 has 3780 GB of additional Disk Arrays for file storage and backups. CSR004 has 163 GB of additional Disk Arrays for file storage. CSR009 has 82 GB of additional Disk Arrays for file storage.							

Non-Production Hardware Environment

Hardware Device Name	Hardware	CPU(s)	RAM	Disk Storage Capacity	Operating System	Operating System Version	Application	Description
Dual 1	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 Gb	Windows 2000	Windows 2000 Server SP2	Synergen Passport Gold Power Center	Web, Application, Report Server
Dual 2	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 GB	Windows 2000	Windows 2000 Server SP2	Synergen Passport Gold Power Center	Web, Application, Report Server
Dual 3	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 GB	Windows 2000	Windows 2000 Server SP2	PeopleSoft HRMS	Application Server
Dual 4	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 GB	Windows 2000	Windows 2000 Server SP2	PeopelSoft HRMS	Application Server
Dual 5	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 GB	Windows 2000	Windows 2000 Server SP2	PeopleSoft Financials	File Server
Dual 6	Dell 2550	Pentium III 2x1.26 Ghz	2 GB	36 GB	Windows 2000	Windows 2000 Server SP2	PeopleSoft Financials	File Server
620ap05	Gateway 9200	4 x 500 Mhz	1 GB	17 GB	Windows NT	Windows NT SP6a	Human Resources, Passport Gold, Power Center	Application Server
620EPM01	Gateway 9200	4 x 550 Mhz	1 GB	34 GB	Windows NT	Windows NT SP6a	Enterprise Performance Management (EPM), Cognos, Power Mart	Application Server

CSR008	HP9000/L2000	1 x 440 Mhz	1 GB	72.8 GB	HP UNIX	HP UNIX 11.11	Metaphase	Database Server
dev01aedc	DEC 4100	3 x 400 Mhz	8 GB	360 GB	DEC UNIX	5.0A(2+) 64	Financials, Human Resources, Networker	Database Server
EPM01	Gateway 9200	4 x 550 Mhz	1 GB	34 GB	Windows NT	Windows NT SP6a	Enterprise Performance Management, Power Mart	Database Server
iisdev	Dell 1300	2 x 700 Mhz	.5 GB	20 GB	Windows NT	Windows NT SP6a	Synergen	Web, Application , and Reports Server
lilabner	HP9000 L2000	2 x 440 Mhz	4 GB	530 GB	HP UNIX	11.0 2002/3 64	Primavera, Synergen, Power Center	Database Server
PAPPY	SUN 250	2 x 400 Mhz	2 GB	72 GB	Solaris	Solaris 8	Human Resources, EPM	Web Server
TLS031	Dell OptiPlex GX110	1 x 500 Mhz	256 MB	18 GB	Windows	Windows 2000 Advanced Server SP2	PVCS Dimensions	Application Server and Database Server
Test_Server	Dell OptiPlex GX150	1 x 1 Ghz	256 MB	18 GB	Windows NT	Windows NT SP6a	WinRunner	Application Server
trn01	HP9000 K220	4 x 120 Mhz	1.5 GB	80 GB	UNIX	11.0 2001/6 32	Primavera	Database Server (Temporary - "Proof of Concept" Exercise)
Z095982	Dell Latitude	1 x 800 Mhz	512 MB	20 GB	Windows 2000 Professional	Windows 2000 Professional SP2	LoadRunner	Application Server
ITISDEV	Dell 6400	2 x 700 Mhz	1 GB	35 Gb	Windows 2000 Server	Windows 2000 Server SP2	MatrixOne	Application Server

APPENDIX 5.1.1-2 AEDC DOWNWARD DIRECTED SYSTEMS

ABSS

The Automated Business Services System is an AF standard system that is currently being deployed throughout the Air Force. ABSS is a financial management system that automates the creation of financial documents (e.g. Purchase Requests, MIPRs, MORDS, etc.) and electronically routes those documents through the approval process. It provides electronic interfaces to the AF standard accounting systems, as well as the AF standard contracting systems, to cut down on the occurrence of data input errors. The goal of ABSS is to eliminate unmatched disbursements and Negative Unliquidated Obligations. ABSS is an Oracle client/server application that uses the latest technology to meet the goals of today and prepare for the goals of the future. The ABSS Program Office located at Wright-Patterson AFB in Dayton, Ohio supports the ABSS Program.

Accessory Manager

Accessory Manager is a COTS software product that provides connectivity to JOCAS II.

ACES

The Automated Civil Engineering System provides property and financial management for work control, housing, fire department emergency response, personnel, readiness and deployment, plus other functionality required to replace the existing Work Information Management System (IWIMS). The ACES impacts the following functions:

Cost Accounting
Inventory Tracking and Accounting
Personal and Real Property Tracking and Accounting
Civil Engineer System
Personnel
Accounts Payable
Disbursing
Resource Planning and Reporting

ACES contains ACES-PM and ACES-RP modules. ACES PM provides information management support for managing and reporting of A106, O&M, MILCON projects. ACES-RP provides real property information management. ACES is Department of Defense (DoD) Data Dictionary Compliant, and uses an Oracle Relational Database Management System (RDBMS).

AFMC Business Process Indicators

The AFMC Business Process Indicators (BPI) database is the primary tool for documenting and analyzing the operational performance of environmental management products and services. Installation-level managers populate the database each quarter and transmit it to headquarters for analysis by their environmental management functional staff. HQ AFMC uses the data to support future-year funding requirements and operational performance projections, and to identify trends or serious concerns that may need attention during the current year. The BPI database is an MS Access application administered by HQ AFMC, Wright-Paterson AFB, Ohio.

Air Force Portal

The Air Force Portal is a single web-based capability to provide a personalized interface to all required, unclassified computer system applications. The Air Force Portal was developed to support the vision of "One Air Force ... One Network." It was a collaborative government and

contractor effort. Currently the Air Force has hundreds of separately managed computer systems. Many use different application system software, very often not compatible with each other. Many of these systems have automated point-to-point interfaces, but many also require manual exchange of data. The web-based portal technology will bring these systems all to a single desktop. The Air Force portal will give the warfighters the ability to view information needed to do their job without regard to the system managing that information. This means a maintainer, stationed anywhere in the world, will be able to log onto his computer, check his e-mail, find out the status of the parts he ordered and find out what time the aircraft that needs those parts is scheduled to take-off, with nothing more than a Web browser loaded on his desktop computer. The portal will merge about 700 legacy databases and hundreds of applications and make a wide variety of information-from personal data to frontline combat intelligence-available to authorized users throughout the service. It is built on Broadvision Portal.

Air Force Materiel Command Portal

The AFMC Portal will provide a unique opportunity to make a transformational change from an inconsistent web interface and web page management to consistent web page interfaces and content management. The AFMC Portal will build off the Broadvision suite of products, which is the same used by Air Force Portal. The AFMC portal will initially provide content management and add applications in follow-on phases. The AFMC Portal will give a common look and feel for all Web information across all AFMC bases. The AFMC Portal will be consistent with and supportive of the Air Force Portal. Within the Portal, all web servers throughout the Command (including those for individual AFMC bases) will be hosted and controlled at Wright-Patterson AFB. The Base-level responsibility is to manage content, not the servers or even the pages themselves.

APIMS

The Air Program Information Management System (APIMS) is part of the Air Force Command Core System (CCS) and can be used to track and prepare Air Emission Inventories (AEI) and maintain air regulatory compliance. It can also provide improved management and control over the Air Management Program by managing permits to include Title V and the National Emission Standards for Hazardous Air Pollutants (NESHAP), TRI reporting requirements, establishing standard operating procedures and work standards, creating automated logs, and developing checklists. APIMS is administered for the Air Force by TRW, Inc.

CITS

The purpose of the Combat Information Transport System is to improve communications connectivity. Over 95% of the full range of secure and non-secure voice and data capabilities used by Air Force operational commanders to make force management and deployment decisions rely on the base common-user cable system for intrabase network connectivity and information transfer. At most Air Force bases, the existing base-wide information transport system is incapable of supporting current and future information needs of the warfighter. The massive proliferation of communications systems and information intensive data applications (e.g., video teleconferencing, imagery, modeling, simulations, etc.) are saturating undersized cable plants. Demands for information, as well as the corresponding Information Warfare (IW) threat, will increase exponentially during contingencies or in times of war. This increased demand will exacerbate information "traffic jams" and adversely impact combat and combat support operations. This program will ensure every active duty and Reserve base has an information transport system (ITS) that will link existing and future voice, data, video, imagery, and sensory systems via a high capacity transport media. The ITS must provide high speed, broadband, digital connectivity and be designed to support current and future technological advancements. This program establishes an integrated information transport utility satisfying users' requirements

for high speed, high bandwidth, cost-efficient base-wide connectivity and interface to long haul information transport systems. It will encompass optical cable systems, digital voice/data/video systems, allied support, network management systems for fixed base networks, information management systems, local area networks, and life cycle management resources.

Supported Products are Acatel VPN, CacheOS, Cisco, ESM, ITA, ISS, Legato, NMS/BIP, NNM (HPOpenView), QIP, Remedy, Sidewinder, Sniffer Pro, Spectracom, MS SQL Server, and NAV SMTP Gateway.

CMOS

The Cargo Movement Operation System (CMOS) is a combat support system that provides automated base level processing for cargo movement during peacetime and both deployment cargo and passenger movement during contingencies for the Air Expeditionary Forces. Software releases are grouped by CMOS Operating System, Carrier Module, and Applications Software.

DM-HMMS

The Hazardous Material Management System (HMMS) is an automated tracking system providing cradle-to-grave tracking, management, and reporting capabilities for hazardous materials and waste. First deployed in 1993, HMMS is a Department of Defense standard, joint-service "purple" system that has helped save millions of dollars in HazMat acquisition through improved business practices supported by the program. Pollution Prevention (P2) and Emergency Planning and Community Right-to-Know Act (EPCRA) are just some of the many functional requirements supported by HMMS.

DTM

Desktop Management (DTM) is an Air Force Materiel Command initiative to manage networked PCs and workstations across the enterprise. The management package is Tivoli.

DUERS

The Defense Utility Energy Reporting System (DUERS) provides DoD with important energy-use and associated data. The DUERS provides data on mobility energy, and facility energy data. The Defense Materiel and Resource Management Policy Directorate uses DUERS data for historical trend analysis, measuring progress toward DoD energy goals, Congressionally-mandated reporting to DOE, and Congressional support data. Under Energy 2005, DUERS data will form the basis for calculating (and subsequently validating) each installation's energy cost savings, of which the Services and installations will retain two-thirds. While DoD recently revised DUERS so that information now comes from the Defense Fuel Supply Center (DFSC) instead of the installations, the installations must remain the sole source of facility energy data for DUERS. No sources of aggregate data exist for facility energy because it is purchased locally. However, most installations do not feed energy data directly into DUERS; instead, the installations provide data to their own Service information systems, which in turn feed monthly energy data into DUERS.

DUSD(I&E) Air Force Internet Data Call System

The DUSD(I&E) Air Force Internet Data Call System is an electronic database used to collect environmental protection program data elements from each Air Force installation during the semi-annual “DUSD(I&E) In Progress Review” data call. These data calls are conducted to collect information for HQ USAF queries. A variety of data regarding the status of environmental compliance, pollution prevention and conservation programs are entered into the database. Frequently, supplemental information, such as environmental successes, significant environmental threats to the installation’s mission and updates on certain regulatory agency

compliance activities may be required as part of the semi-annual data call. The data is used by higher Headquarters to produce the Department of Defense (DoD) Semiannual Environmental Quality Program Review (EQPR). The database system is versatile and was developed for users familiar with the MS Excel application. The database's data publishing system uses MS Excel and MS Word. The data repository is located at HQ AFCEE in San Antonio, Texas.

EQDB

The AFMC Environmental Quality Database (EQDB) is an electronic database used to plan and program the environmental quality (EQ) programs, projects and funds needed to conduct the Arnold AFB environmental protection programs. The database is used to program the environmental compliance, conservation (natural and cultural resources), and the pollution prevention program pillars of the Arnold AFB EQ program. The EQDB is used by higher Headquarters to review, approve and fund Base environmental protection program requirements that are driven by government regulatory requirements and permits, DoD and Air Force policy, and Air Force regulations. The information entered into the database project records includes detailed environmental quality project descriptions, justifications and cost estimates. The database is an Oracle based system and is maintained at HQ AFMC, Wright-Patterson AFB, Ohio.

FAS

The Fuels Automated System is designed to support the Defense Energy Support Center (DESC) and the Military Services in performing fuels management and distribution. FAS supports the Fuels Supply Management - Wholesale and Retail Business Areas. The customer base is DoD-wide for all fuels. FAS is a commercial-off-the-shelf system (COTS) to provide accounting, contracting, and fuels management support. It is a multi-functional system providing point of sale, data collection, inventory control, finance and accounting, procurement, and facilities management.

GAFS

The General Accounting and Finance System, also known as BQ, is the Air Force standard base level accounting system for most appropriated funds. It includes the accounting records for funding authority, commitments, obligations, expenditures, and balances of available funds. The primary means of system input is via the online entry. Financial status reports are produced on a monthly basis and forwarded to the Defense Finance and Accounting Service-Denver Center. Other management reports are produced for MAJCOMs and installations. Budget execution data is tracked in GAFS at the document/contract level. GAFS is a "net system" meaning the system reflects the current balance remaining for the particular commitment/obligation stage.

The general system incorporates these elements.
General Funds: Anticipated Reimbursement Control, Budget Authorization Control, Operating Budget Control, Program Authorization Control, Appropriation and Fund Accounting, Cost Accounting, Expense Accounting, General Ledger, Accounting, Memorandum Accounting, Merged Accountability and Fund Reporting.
Stock Funds: Disbursement Accounting, General Ledger Accounting, Reimbursement Accounting, Merged Accountability and Fund Reporting.
Industrial Funds (Operating Budgets): Anticipated Reimbursement Control, Operating Budget Control. Appropriation and Fund Accounting, Expense Accounting, General Ledger Accounting, Merged Accountability and Fund Reporting.

Industrial Funds (other than operating budgets): Disbursement and Open Item Accounting (where this is not per-formed manually or in supporting computer systems), Reimbursement Accounting, Merged Accountability and Fund Reporting.
Other Funds (Management, MAP, Special, and Trust Funds): Budget Authorization Control, Appropriation and Fund Accounting, General Ledger Accounting, Merged Accountability and Fund Reporting.
Disbursement and Collection Control: For-Others, For-Self and By-Others, Interfund Billings, International Balance of Payments, Open Allotments, Receipt Accounts.

GeoBase

GeoBase will be the standard Air Force geographic information system (GIS) and will consist of ESRI and possibly Intergraph software modules. The underlying data storage is in the Oracle Spatial database, which provides a software-independent format. AEDC began migrating conservation data to the ESRI GIS platform in October 2002. The format is compliant with the Air Force GeoBase initiative using SDSFIE version 2.2 as the database standard. The software platform conversion for Conservation is anticipated to be complete in spring 2003 with Compliance and IRP following shortly after.

The existing GIS consists of mission data sets for Conservation, Compliance, and the Installation Restoration Programs. Included in the system are base wide graphics digitized from 1997 Aerial photographs such as, buildings, roads, airfield, and streams. GIS software presently being used includes Intergraph and ESRI mapping products with data residing in Oracle version 8.0.5 and Microsoft Access databases. Current capabilities include visualizing installation and environmental features, querying and locating features based on their attributes, and performing spatial analysis such as proximity analysis.

INFOConnect

INFOConnect is a Windows® 2000 certified solution for UTS20, UTS40, and UTS60 terminal connectivity with Unisys® 2200 Series and ClearPath™ HMP IX systems. As a Windows 2000 Certified application, INFOConnect PEP 2001 takes full advantage of the technologies inherent to Windows 2000 including terminal server, application self-repair, roaming user profile, and power management capabilities.

JOCAS II

The Job Order Cost Accounting System is a full cost and managerial accounting system for the user community. It is an accounting system that identifies costs that support a specific job order and an interactive, on-line database that uses advanced software and database techniques to provide real-time access to accounting data. It is designed to systematically measure and assemble identifiable costs incurred for the operation of specific AFMC Product Centers, Air Force Research Laboratory (AFRL), and MRTFB Sites. JOCAS II introduced a Graphical User Interface (GUI) via a web browser front end. This web interface allows you to use your mouse to point and click your way through the JOCAS II application while only requiring a web browser. Specific uses:
(1) Provide information to managers to make resource allocation decisions.
(2) Provide information to managers to assess their organization's performance and assist in short and long-term planning.
(3) Support performance and cost standards development, resource requirements estimates, productivity measurement and the reimbursement billing process.
(4) Provide information to support customer pricing and billings.
(5) Collect job order cost accounting information and maintain an interactive, real-time access, on-line database from which users can produce reliable and timely management reports.

This database provides financial information to support recurring reports, higher headquarters inquiries, budget submissions, programming, manpower requirements, and trend analysis.
(6) Provide fast, easy data access; processing; and reporting using interactive, real-time access to an on-line database.
(7) Track costs to individual job order numbers (JONs) and responsibility centers/cost centers (RC/CCs) and provides detailed accounting for all costs (direct, indirect, and overhead) with special emphasis on reimbursable costs.
(8) Track costs and cost summaries back to their original input locations, providing an audit trail for all cost accounting data. This includes identifying the total cost of work performed to a product or activity and provides the total cost of individual segments of overall missions.
(9) Provide tools used by management to monitor accrued costs and maintain rates charged for products and services.
(10) Provides the capability to estimate JON costs. JONs can be structured so estimated and actual costs are tracked by work breakdown structure.
(11) Provide cost information in standard, preformatted reports in addition to customized reports.
Accumulate, record, edit, and report applicable cost data on Air Force Material Command (AFMC) activities related to projects, tasks, work units, weapon system programs, and evaluation efforts.

JOCAS II meets the Federal Manager Financial Integrity Act (FMFIA) certification requirements and conforms to the CFO ACT.

JOCAS II interfaces with other accounting systems, thereby ensuring all costs are tracked and minimizing report duplication. JOCAS II provides AFMC activities the ability to identify all reimbursable costs for services provided to customers. Cost centers within an organization are classified as direct cost centers or support cost centers. The core of JOCAS II is the job order register that contains all required and optional data elements for each job order number (JON). Costs within JOCAS II are classified as direct, indirect, or overhead. JOCAS II provides a variety of output products in the form of reports and tables to assist management. JOCAS II interfaces with other automated systems to provide an automated input of data collected by the systems. For example, it generates journal voucher and billing files for transfer to the General Accounting and Finance System (GAFS).

LeaveWeb

LeaveWeb is the point and click solution to filling out AF form 988 in FormFlow, getting leave numbers, getting a supervisor to sign them, going on leave, and having to do the signing process all over again when you return with the Part III. That was the past! No more walking your AF988's here and there... it's all done electronically.

MDCPDS

The modern Defense Civilian Personnel Data System is a human resources information system that supports civilian personnel operations in the DoD.

MilMod

MilMod, short for military modernization, is an all-new personnel data system. MilMod takes us into the age of the Internet. It is designed to continue the Air Force's move toward improved customer service using advanced technology. MilMod supports all personnel "life cycle" management functions from recruitment through job assignment and ultimately separation or retirement. It provides real-time updating and reporting capabilities. The system provides a

graphic user interface, giving every personnel technician online, real-time access to personnel information.

OLVIMS

The On-Line Vehicle Interactive Management System tracks vehicle and fleet operations and maintenance cost and utilization data. It is designed to:

- Provide current serviceability status;
- Manage and project scheduled and unscheduled maintenance;
- Handle parts requirements/consumption quantity and cost data;
- Accumulate fuel quantities consumed and associated cost data;
- Manage warranty of vehicles, parts, and contracted maintenance;
- Track and report labor time accounting activity;
- Facilitate reporting and compliance.

The user has total control and responsibility for the accuracy of the database that resides on an authorized microcomputer located within the system users work area. It is primarily a base-level system with upward reporting capabilities, and is in use at over 375 vehicle organizations world wide. Users of OLVIMS are all USAF vehicle maintenance shops doing intermediate maintenance.

OLVIMS is designed as a base-level management information system, that allows upward reporting. The purpose of the system is to provide an online, interactive system of records and files that can be created, accessed, updated, deleted, exercised, and summarized in a real-time manner. OLVIMS will provide online processing with immediate response, which ensures the database is current as of the last update. A personal computer based menu-driven vehicle maintenance management system. The system provides users with vehicle maintenance and operations management products in the form of screen displays, hard copy reports, charts graphs etc., needed to manage and maintain the Air Force vehicle fleet.

PAMS

Precision Measurement Automated Management System (PAMS) is a standard system, sole repository, and single entry point for the overall collection, tracking, and retrieval of maintenance and quality assurance data of over 640,00 items of test, measurement, and diagnostic equipment (TMDE). PAMS is hosted at AFMETCAL Detachment 1 and is accessed by users via the Internet (NIPRNet). The application is coded in Java and the user interface is Java Server Pages. The database is built in Oracle 9i.

PureEdge

The PureEdge Internet Commerce System is a COTS product that is being implemented Air Force-wide to transform existing static e-forms to an interactive process based on current e-business models. PureEdge e-forms are based on open XML standards and provide users with the ability to digitally sign documents, use ad hoc routing, move data in and out of other systems, and store all elements of a transaction in one secure file, including presentation. The application of XML-based technology to enterprise-wide Air Force forms is intended to significantly improve service to the warfighter through ease of use, enhanced management capabilities and streamlined processing of forms and content. The PureEdge Information Management Tool (IMT) Solution being implemented by the Air Force Departmental Publishing Office (AFDPO) in cooperation with the Air Force Office of Installations and Logistics (AF/IL) replaces the technology of traditional forms. Under the new program, the printed form is only one of many potential outputs of what will comprise the new system. With the implementation of the IMT Technology, the word "form" will be replaced with "IMT" by order of the Air Force Chief Information Officer. This change reflects the many new capabilities brought about by this new technology.

RAPIDS

The Real-time Automated Personnel Identification System (RAPIDS) is the main online military personnel system, runs at every personnel office in every U.S. military facility throughout the world. The Defense Enrollment Eligibility Reporting System (DEERS) is an online database that today contains more than 18 million beneficiary records. It verifies the eligibility of individuals who claim they are entitled to Uniformed Services benefits and is the primary personnel database with which other systems interface. All of the uniformed services as well as personnel and medical communities within the DoD use DEERS. RAPIDS is the means by which DEERS is updated, and it is used for the issuance of Uniformed Services identification cards.

The development platform for RAPIDS 5.x is Microsoft Windows NT® 4.0. Both Visual C++ 5.0 and Development Studio 6.0 are being used in the development of systems. Rational Rose is the object-oriented design tool. RAPIDS 5.x software uses Pentium workstations, digital cameras, two-dimensional bar-code scanners, fingerprint devices, and LaserJet(r) printers to create the automated Uniform Services identification card. The DEERS medical systems use 3270 terminals or PCs with terminal emulation packages to check beneficiaries' eligibility. Connectivity to DEERS is managed through the Defense Information Systems Network (DISN). DISN network traffic is routed through the primary DISN network node at Battle Creek, Michigan, which supports connectivity to the DEERS database at the EDS Auburn Hills, Michigan, Service Management Center.

Remedy Action Request System

The Remedy Action Request System is a flexible foundation for automating complex business processes. The system lets you replace outdated manual systems with workflow automation that speeds the handling of unique processes and optimizes user productivity. Use of Remedy is mandated by the Air Force for tracking computer system trouble tickets (work orders).

SFMIS

Security Forces Management Information System (SFMIS) is a web based progam used by the Air Force to record and track incident reports, tickets, barments, driving records, revocations and suspensions. All Defense/National Incident-Based Reporting System (DIBRS/NIBRS) reportable incidents are also reported using SFMIS. The system is used to collect and extract statistics and reports to satisfy congressionally mandated requirements of the Uniform Federal Crime Reporting Act (28 U.S.C.534), the Brady Handgun Violence Prevention Act of 1994 and the statistical reporting requirements of the Victim Rights and Restitution Act of 1990 (42 U.S.C. 10601 et seq.).

TMS

The Telephone Management System (TMS) is a comprehensive software/database package for managing the configuration of telephone infrastructure, printing a telephone directory, providing workflow for telephone service work orders, and validating telephone bills. It is built on top of an Oracle database. It is managed by the Combat Information Transport System (CITS) Program Office.

WINPC3VT

WINPC3VT provides PC users with terminal emulation for accessing the Air Force military personnel system PC3.

APPENDIX: PWS DICTIONARY OF TERMS

TERM	DEFINITION
Acquisition Plan	A summary of the specifics of the technical, schedule, logistics, financial, and business considerations of a particular phase within a program.
AEDC Exercise Evaluation Team	A team established for the purpose of performing disaster response force exercise performance evaluations.
AEDC Limited Access Programs	Programs that in some way involve sensitive information that the customer restricts access to information pertaining to the program or knowledge of the programs.
AEDC Operations Center	The location manned by both government and contractor personnel to schedule and control Center test and research facilities and perform selected Command Post functions.
AF Command Post	An Air Force office staffed 24 hours a day to handle emergency situations and conditions.
AF Daily Log	A continuously updated record of events and activities maintained by the operations center
AFOSH	Air Force Occupational Safety and Health
Air Force Real Property Officer	Air Force member accountable for real property.
Ancillary Equipment	Components of Radio Frequency Services other than the basic transmit or receive devices. These items include microphones, speakers, battery chargers, antennas and other support systems
ANSI	American national Standards Institute

TERM	DEFINITION
Antiterrorism Program	A program that seeks to deter or blunt terrorist acts against the U. S. Air Force by giving guidance on collecting and disseminating timely threat information, providing training to all members, developing comprehensive plans to deter, counter, and recover from terrorist incidents, allocating funds and personnel, and implementing defensive measures.
Appropriation 3400 resources	DoD component Air Force Operations and Maintenance (O&M) funding
Appropriation 3600 resources	DoD component Air Force Research, Development, Test & Evaluation (RDT&E) funding.
ASQ	American Society for Quality
Automated Civil Engineering System (ACES)	An Air Force-wide system used to interface AEDC M&R, MC, MILCON, NAF, MFH, and Environmental projects with AFMC and USAF.
Base Civil Engineer	Air Force civil engineer responsible to the commander for operations and maintenance of the base support infrastructure.
Blueprint	A document that describes in detail the current C-CS infrastructure, defines future requirements, and outlines an achievable phased transition plan from the current condition to the target architecture.
Cable Plant	Any wiring (fiber optics or twisted pair copper) that is direct buried, overhead aerial, within duct systems or conduit that is used to support any type of communication requirements (i.e. voice, data, video, images, alarm systems, etc.)
Center Information Channel	A closed-circuit, mainly character-based, cable TV system, (Video Bulletin Board) limited to AEDC

TERM	DEFINITION
Central Base Pager System	A common-user system providing paging service to all organizations on an installation, including tenants. Delivers a short voice or alphanumeric message to the user.
Certificate Authority Workstation (CAW)	Computer used to perform user registration functions, certificate management, and FORTEZZA initialization services. It supports communication of classified information up to the Secret level including the functionality needed when using the FORTEZZA Card to protect classified information.
Certificate to Operate (CTO)	Document used to certify that a new/modified (major modification only) computer system has been evaluated for impacts to the Center's Information Technology (IT) infrastructure.
Certification and Accreditation (C&A)	Process of analyzing threats and vulnerabilities of a communications-computer system and gaining DAA approval to operate the system.
Chief Information Officer	The CIO provides the leadership and serves as the focal point for assuring the Information Technology (IT) emphasis within the Center is meeting AEDC's business objectives through sound IT strategic and capital planning, leveraging of AEDC and Air Force Materiel Command (AFMC) IT, and effective performance metrics of IT investments. The CIO is designated by the Commander and currently is the AEDC Technical Advisor (AEDC/CA).
Communications Service Authorization (CSA)	A contract vehicle to obtain service from the local exchange carriers
Communications-Computer System Installation Record (CSIR)	Drawings showing the latest configuration of equipment including layout, cable identification and routing, wiring schematics, communication networks, on-line drawings, and duct bank distribution. (AFI 21-104)

TERM	DEFINITION
Computerized Maintenance Management System (CMMS)	A system that provides centralized, uniform equipment identification, preventive maintenance scheduling, integrated configuration management, maintenance cost tracking, and automated on-line predictive maintenance.
Construction and Base Maintenance Equipment	A vehicle designed for repair, utility, maintenance, and construction operations, such as earth-moving equipment, bulldozers, and generators
Construction Debris	Construction wastes are defined in TDEC Rule 1200-7-.01(2) as bricks, concrete, and other masonry materials, soil, rock, lumber, road spoils, rebar, cardboard, and paving material. Metal turnings and liquids are not considered construction debris.
Contractor Chief of Security Forces	Single point of responsibility for contractor security forces.
Control System	A system with the ability to change a condition in a test article, a test facility, or a utility system.
Controlled Area	An area as defined and designated in accordance with AFI 31-101, The Air Force Installation Security Program. This is different from those controlled areas defined in DoD 5220.22-M, National Industrial Security Program Operating Manual.
Costed Entity	Allocation of direct budget authority (DBA) versus reimbursable budget authority (RBA) resources.
Customer	The organization for which the item to be tested or work to be performed at AEDC is being developed or produced. May also be referred to as the sponsor.
Data Acquisition System (DAS)	Systems that acquire inputs from instrumentation; and convert the inputs into engineering units such as pounds per square inch, inches, or degrees.

TERM	DEFINITION
Data Administration	The non-technical activities of planning for the data base environment as well as the conceptual details of design that are not related to specific Data Base Management System (DBMS) use. The data administration function is end-user oriented and is concerned with functional requirements related to the data base environment.
Defense Message Service (DMS)	All hardware, software, procedures, standards, facilities, and personnel used to exchange messages electronically between organizations and individuals in DoD.
Defense Switched Network (DSN)	A worldwide government network that provides voice and data service between DoD agencies
Design-Build Project	A project that uses one contractor to design and construct a project. The contractor is responsible for his design, construction quality, and compliance with the RFP and his accepted proposal.
Disaster Response Force	The personnel trained and equipped to respond to emergencies and disasters.
Ecosystem Management	A process that considers the environment as a complex system functioning as a whole, not as a collection of parts, and recognizes that people and their social and economic needs are a part of the whole.
EM Control Center	A location equipped and staffed to enable communication and control of emergency management.
EM Manager	The contractor individual responsible to the Center Commander for all matters relating to AFI 32-4001, DoD 5100.52-M, and AAFB Plan 32-1. The EM Manager chairs the Base HAZMAT Planning Team and serves as HAZMAT Emergency Program Manager. Single point of responsibility for Emergency Management.

TERM	DEFINITION
Emission Security (EMSEC)	The protection resulting from all measures taken to deny unauthorized persons information of value that might be derived from NONSPTOP and HIJACK interceptions and the interception and analysis of compromising emanations from crypto-equipment, information systems, and telecommunications systems.
EPA	Federal Environmental Protection Agency
Exhibit RD-4	An annual report from HQ AFMC to Congress required by AFI 65-601 which results in authority to use RDT&E funds to acquire and install equipment in existing facilities, acquire temporary facilities, or perform MC with 3600 funds. AEDC requirements are submitted to HQ AFMC and become an attachment to this report.
Facility Security Officer (FSO)	Single contractor point of responsibility for facility security.
FAMCAMP	Camping area on Northshore Drive.
FDA	Food and Drug Administration
FTS-2001	A General Services Administration (GSA) contract, which provides long distance carrier service for all federal agencies
Fuels Automated System (FAS)	Process fuels transactions from point of sale, through DFAS, to vendor payment.
FYDP	Future Year Defense Plan. See long-range plan.
General Purpose Vehicle	A vehicle designed for moving personnel or material and for towing trailers: it satisfies general automotive transport needs.
Government Transportation Representative	A designated Air Force official with approval authority for base-level vehicles.
Grounds	All areas not occupied by buildings, structures, pavements, and railroads.

TERM	DEFINITION
Grounds - Enhanced	Lawns, landscaping, and plantings surrounding headquarters or command facilities, static displays, and memorials.
Grounds - Improved	Grounds on which intensive development and maintenance measures are performed. This category applies to lawns, landscaped plants in and around buildings, main access routes, athletic fields, recreation areas, and cemeteries. Intensive and Routine care are two categories within this grouping
Grounds - Semi-improved	Grounds on which periodic, recurring maintenance is performed but to a lesser degree than on improved grounds.
Grounds - Unimproved	All remaining areas not grouped as improved or semi-improved
High Performance Computing Distributed Center (HPC DC)	Multi-processor computers used to support modeling and simulation and real-time or near-real-time data acquisition.
House Wiring	Any wiring (fiber optics or twisted pair copper) used to support communications (voice, data, video, images, alarm systems, etc.) requirements within any government building.
Improvement and Modernization (I&M)	The use of proven new materials, components, or subsystems to meet higher standards of productivity than are possible with the original equipment or materials.
Information Systems Security Officer (ISSO)	Official who manages the COMPUSEC program for an information system(s) assigned to him or her; including monitoring information system activities, and ensuring that the information system is operated, maintained and disposed of according to security policies and practices.

TERM	DEFINITION
Information Technology:	Any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception **of data or information.** Information Technology includes computers, ancillary equipment, software, firmware, and similar procedures, services, and related resources.
Installation Radiation Safety Officer	Single point of responsibility for radiation control.
Instrumentation:	Measuring devices such as temperature sensors, flow meters, orifices, anemometers, load cells, pressure transducers, potentiometers, metal detectors, transducers, and mass flow meters.
ISO	International Standards Organization
Job Order Cost Accounting System II (JOCAS II)	A standard government system for accounting government time and labor and providing the capability to bill customers for reimbursable work
Long-Range Plan	A plan that quantifies work requirements to provide a basis for a six-year projection of funding and manpower requirements.
Maintenance & Repair (M&R)	The work required to preserve real property and real property systems and components to prevent premature failure or wear-out, or to restore same to such condition that they may effectively perform their designated function.
Maintenance & Repair – First Level (Also called activity-level maintenance)	The work performed in preparation for start-up, operation, and shutdown processes to assure that equipment and systems are in proper condition for operation, to protect them during operation, and to complete protective measures following shutdown. Requires no teardown or disassembly. May be preventive or corrective.

TERM	DEFINITION
Maintenance & Repair – Second Level	The work performed which provides the periodic inspection of equipment and systems to determine and perform those recurrent and scheduled work requirements necessary to preserve and restore real property facilities, equipment, and components to a usable condition. Usually requires teardown or disassembly. May be preventive or corrective.
Maintenance and Repair Activity	Maintenance and repair work request with an estimated cost not exceeding $50,000.
Maintenance and Repair Project	A single maintenance and repair effort with an estimated cost exceeding $50,000.
MAJCOM	Major command, i.e. Air Force Materiel Command, Air combat Command, etc
Major T&E Improvement & Modernization (I&M)	A program for acquiring and installing research and development equipment in RDT&E facilities, to improve and modernize existing facilities, to update existing equipment for the purpose of meeting new test support requirements, and/or increasing efficiency of operations.
Management Information Systems (MIS)	Software applications used to supply operational, managerial, and administrative information to managers. Management information systems are typically used to collect, analyze, archive, or disseminate information in support of business management functions. This does not include software used to control equipment or collect data from automated equipment.
Military Affiliate Radio System (MARS)	Fixed and mobile communications that support worldwide emergency communications. Manning to support MARS is by uncompensated volunteers trained in radio operations

TERM	DEFINITION
Military Construction (MILCON) Program	A program consisting of projects involving the modification of existing real property facilities or equipment, or the construction of new real property facilities, where the estimated cost exceeds $750,000. Projects within this program require Congressional authorization and approval.
Minor Construction (MC)	The addition, expansion, extension, alteration, conversion, replacement, or relocation of existing facilities. The erection, installation, or assembly of new facilities shall not to exceed $750,000. The Contractor has approval authority up to $15,000.
Minor Construction Activity	Minor construction work with an estimated cost not exceeding $15,000 for which the Contractor has approval authority
Minor Construction Project	A project or part of a project involving the modification of existing real property or equipment, or the construction of new real property facilities with an estimated cost greater than $15,000 but less than $750,000.
Mobile Command Post	Vehicle marking and designation required by AFI 32-4001 on the vehicle equipped with emergency response communication capability.
Mothballed	A unit in which there are no tests scheduled, maintained in a condition allowing reactivation in three to six months.
Nonconformance	Actual and potential defects, system inconsistencies, and trends that could result in test component failures or unsatisfactory test services.
Non-operational	A unit for which there is no scheduled or forecast requirement, maintained in a condition to prevent catastrophic deterioration.
NRC	Federal Nuclear Regulatory Agency

TERM	DEFINITION
On-Scene Commander	The AEDC EM Manager (or designated representative) responsible to the Center Commander for all matters related to AAFB Plan 32-1 and for directing response actions during hazardous material and substance spills. Also the off-base authority present and directing AEDC assistance to an off-base response.
Operational	A test unit status in which no known maintenance or operational condition exists preventing testing.
OSHA	Federal Occupational, Safety and health Administration or the State agency responsible for the enforcement of safety and health standards in the state.
Parametric Cost Estimating System (PACES)	An Air Force system used to generate cost estimates for MILCON Programs.
Pavements/Appurtenances	Includes all roadways, signs, entrances (gates and other devices), and markings related to traffic control and safety
Permissible Operating Distance (POD)	A radius of 75 miles around AEDC
Personal Wireless Communications Systems	Combination of systems, which may include a combination of conventional or trunked LMR, pagers, cellular telephones, and other wireless local area network technologies
Project Completion Notice	The notice that formally declares the completion of a project.
Readiness Center	A location established ad hoc for government emergency response.

TERM	DEFINITION
Real Property	Real property includes lands and interest therein; leaseholds; buildings, structures, improvements and appurtenances thereto; piers; docks; warehouses; rights-of-way and easements, whether temporary or permanent; and permanently attached improvements. This includes articles of personal property which, upon being affixed to the realty, become part of it. It does not include machinery, equipment or tools which have not been secured or which have been removed from any such lands or buildings.
Real Property Installed Equipment (RPIE)	Those Government-owned or leased accessory equipment, apparatus, and fixtures which aid in the function of the real property and are permanently attached to, integrated into, and built in or on Government-owned or leased property. Excluded is that organizational or collateral equipment reflected in property records. Also excluded are technical, medical, commissary, aircraft-installed, fixed laundry and dry cleaning, Military Affiliate Radio Station (MARS), cryptographic, automatic data processing, and rental equipment.
Requirement and Analysis Management Plan (RAMP)	A document used for a Military Construction (MILCON) project that provides the design agent and designer project planning information to be utilized in negotiating the design contract and completing the Project Definition (PD) package.
Run, Shot, Firing	One complete operational cycle of the test facility, including installation, operation, and test article removal as appropriate.
Sensitive unclassified data	Sensitive/unclassified information. Examples of sensitive/unclassified information are; For Official Use Only (FOUO) data, medical records, financial data, data related to the AEDC mission, Privacy Act data and proprietary information.
Shop Folder	A standardized file containing documentation of workplace surveillance and exposure data

TERM	DEFINITION
Site Plan	A detailed plan of a project that shows, at a minimum, all existing utilities, buildings, and pavements adjacent to the site with an outline drawing of the proposed facility location including support such as new roads and utilities.
Small Business Innovation Research (SBIR)	A program whose objectives include stimulating technological innovation from the private sector, strengthening the role of small business in programs meeting national research needs, and fostering and encouraging participation by minority and disadvantaged persons in technological innovation.
Special Purpose Vehicle	A vehicle designed for a special requirement, including specially designed items, such as fire trucks, high-reach trucks, and aircraft rescue trucks
Sponsor	The organization for which the item to be tested or work to be performed at AEDC is being developed or produced. May also be referred to as the Customer.
Standard Systems	Standardized hardware and/or software systems mandated for use by the Air Force or DoD. Examples include, but are not limited to, Job Order Cost Accounting System (JOCAS), Desktop Management System (DMS), Modernized Military Personnel Data System (MILPDS), etc.
Standby	A test unit in which no tests are currently scheduled and is maintained in a condition allowing reactivation in three months or less
Technical Data Package	Technical requirements, drawings, specifications, detailed cost estimate, an estimated performance schedule, and other associated data required to define the work to be performed.
Technical Report	A formal document which describes the results of research, development, test, and evaluation

TERM	DEFINITION
Telephone Management System (TMS)	TMS is a downward directed program that allows base level communications offices at a minimum to perform the following functions: Directory updates and maintenance, Telephone directory generation records maintenance records (circuit, line, cable, & carrier), trouble reporting and trouble ticketing, inventory and subscriber line maintenance, switch inventory, work order processor, and telephone billing and verification
Test Peculiar	Unique to a particular test customer or user requirement.
Test Summary Report	A formal document which provides a permanent record of the AEDC effort in conduct of a test
Test Unit	The structure, excluding inlet and exhaust valves, that accommodates a test article during test.
Test, Measurement, and Diagnostic Equipment (TMDE)	Those devices used to test, measure, evaluate, inspect, or otherwise examine materials, supplies, equipment, and systems to identify or isolate any actual or potential malfunction.
Tracking and Reporting Software (TRS)	The Air Force inventory system for PWCS equipment.
Traffic	The direction, control, and supervision of all functions incidental to the effective and economical procurement and use of freight and passenger transportation service from Airlift Mobility Command (AMC) or commercial transportation companies
Traffic Service Station	A mailbox account in DMS OUTLOOK set up to receive messages that do not have an associated organizational account in the DMS directory.
User	The organization that is developing or producing the product to be tested. This is typically the OEM. The customer and the user may or may not be the same organization.

TERM	DEFINITION
Workplace	A physically definable indoor or outdoor area where work is performed. Workplaces may be administrative or industrial.